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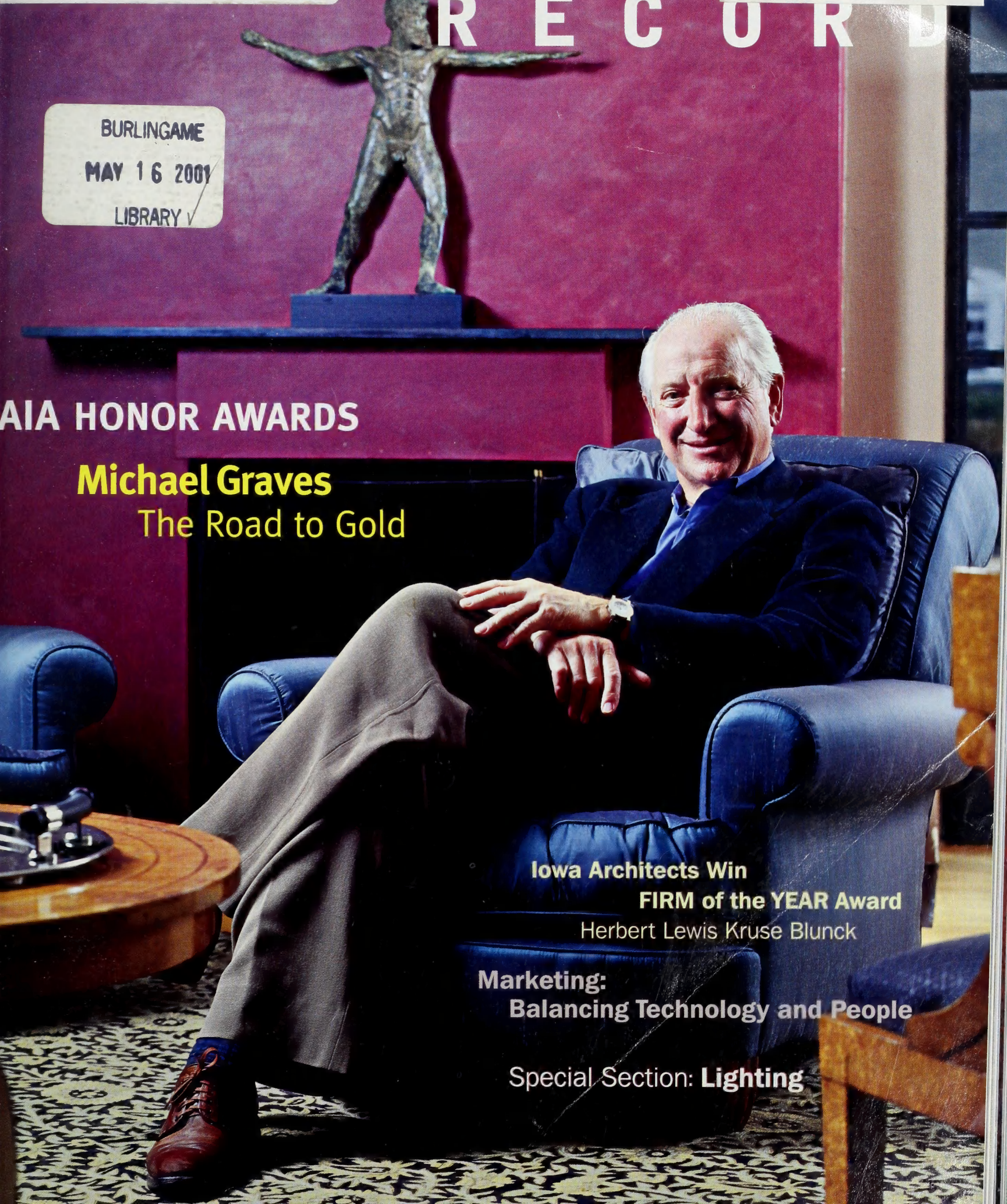

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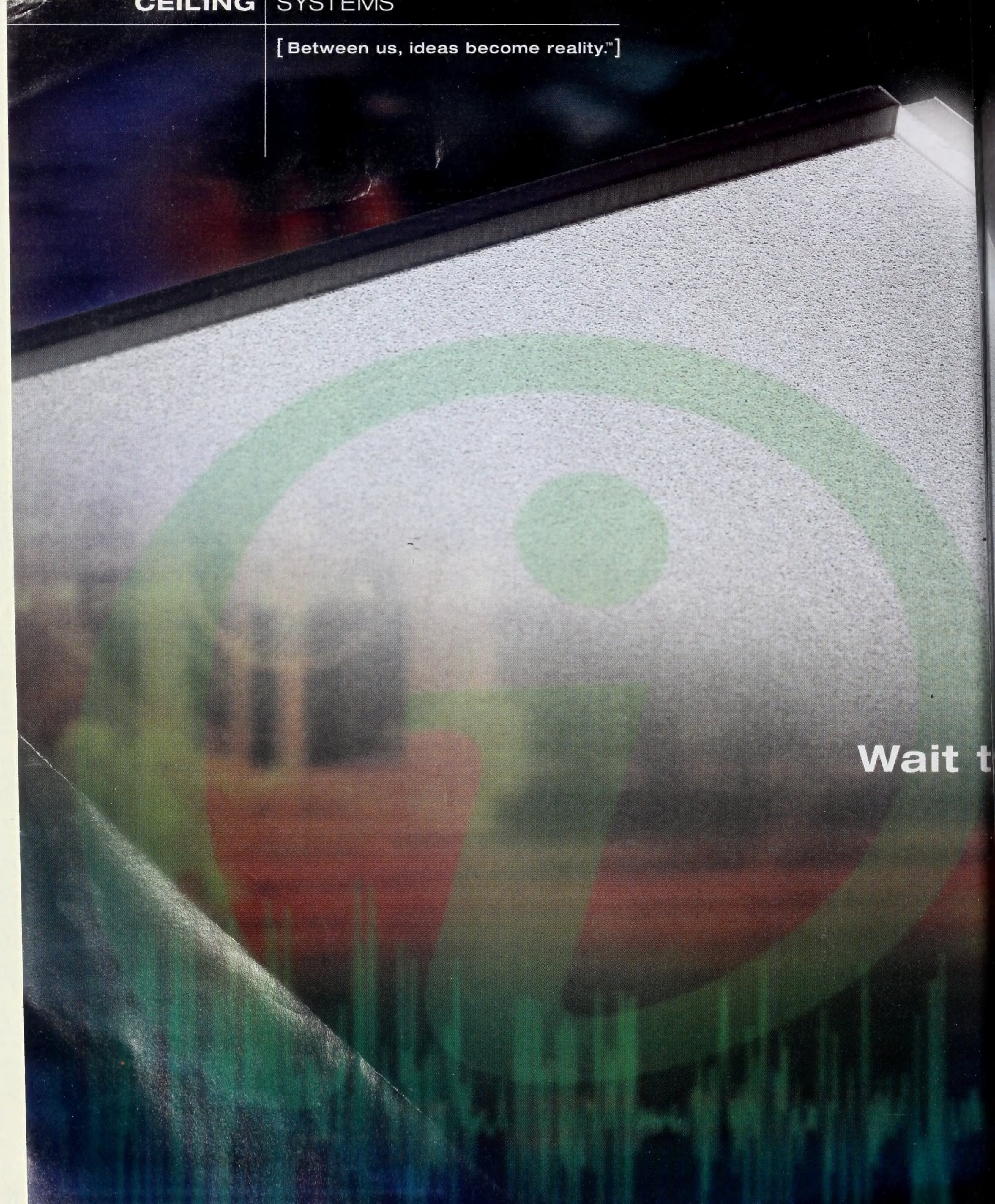
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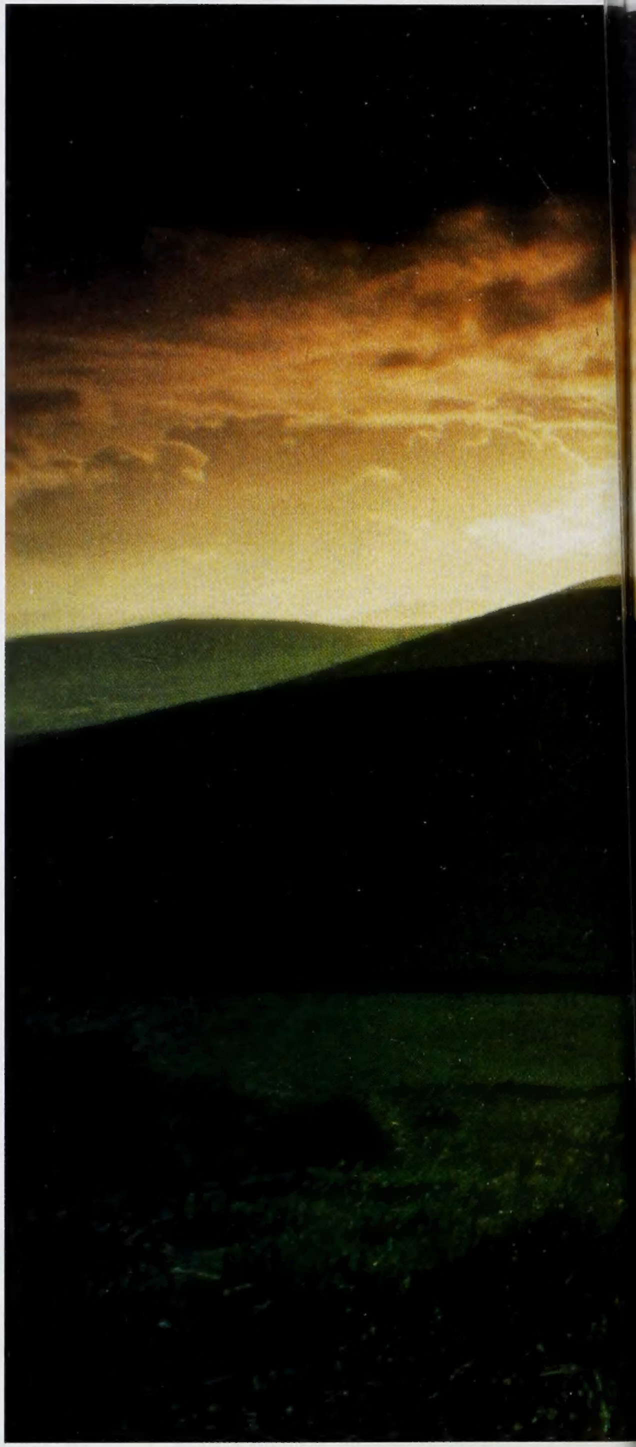

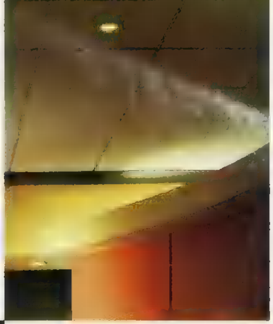

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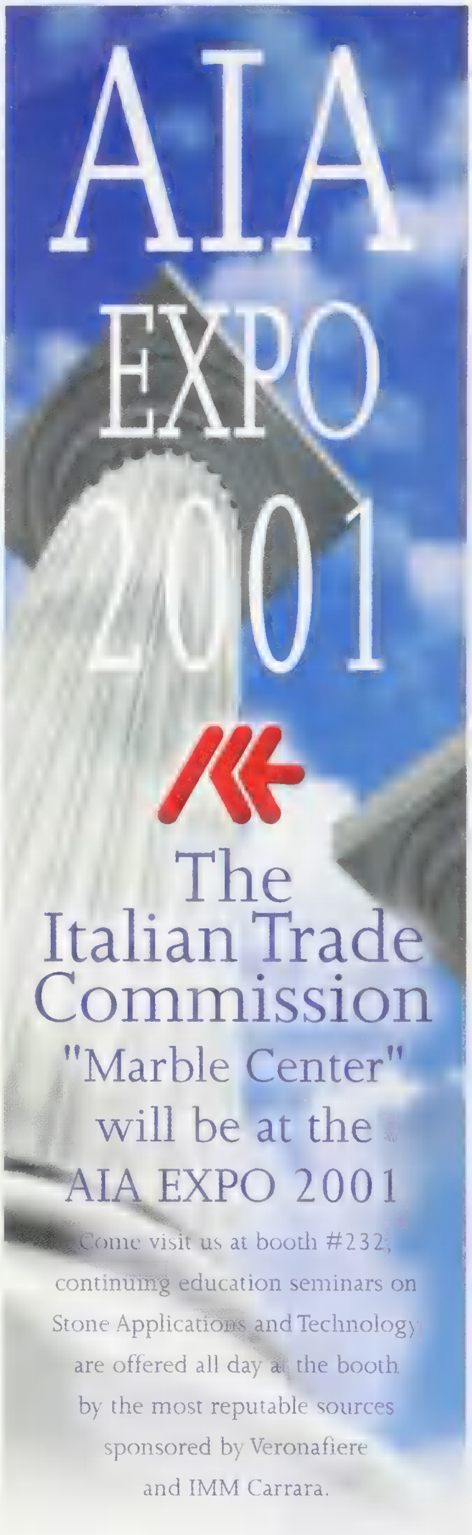
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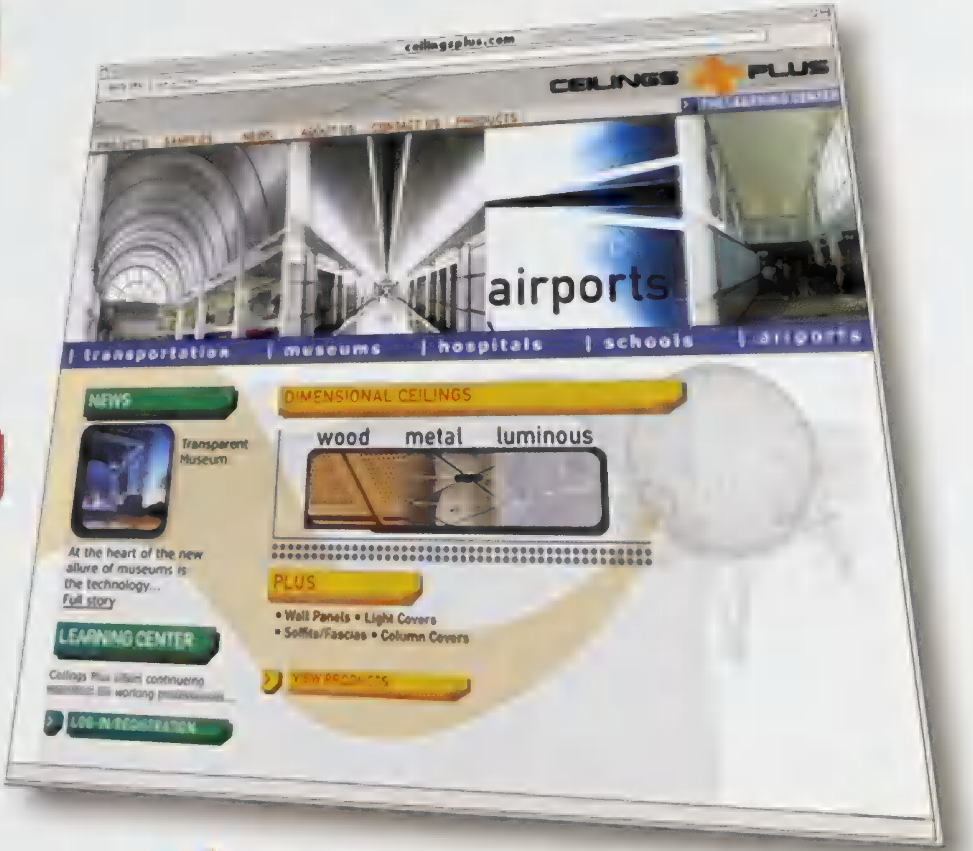

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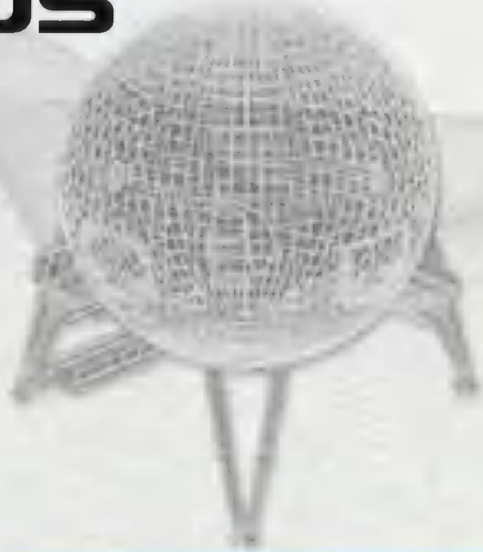

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- "How to Properly Specify Maple Athletic Floors" *sponsored by Maple Flooring Manufacturers Association [page 286]*
- "Positive Pressure Ripples Through the Door Industry" *sponsored by Window & Door Manufacturers Association [page 292].*

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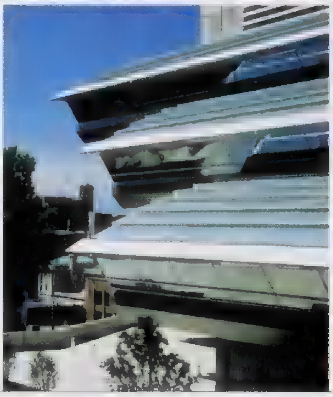

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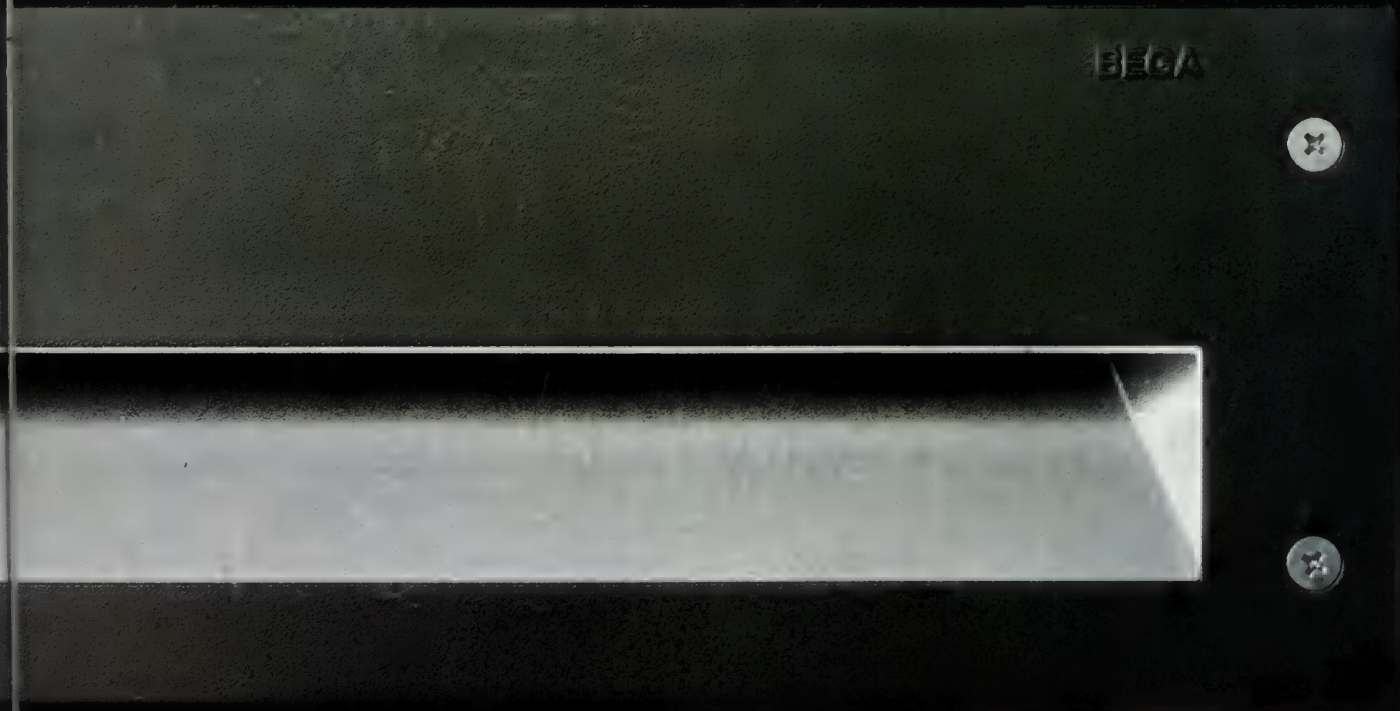

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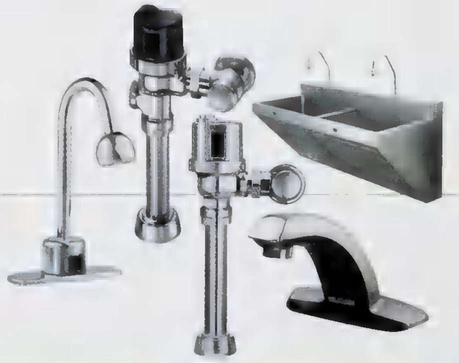

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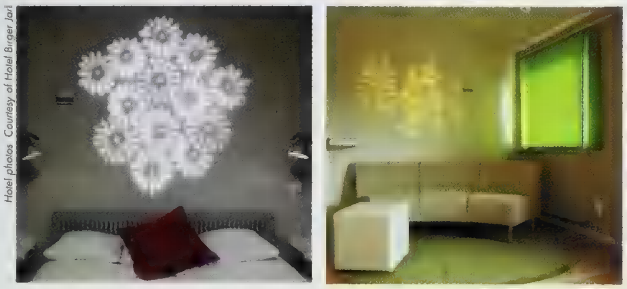
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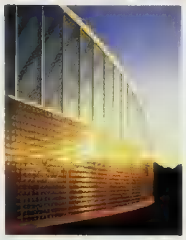

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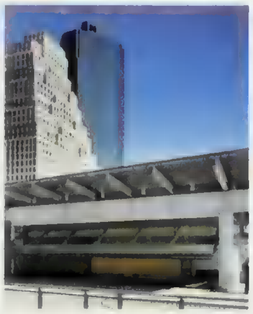
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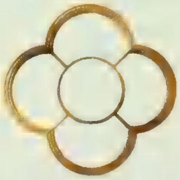

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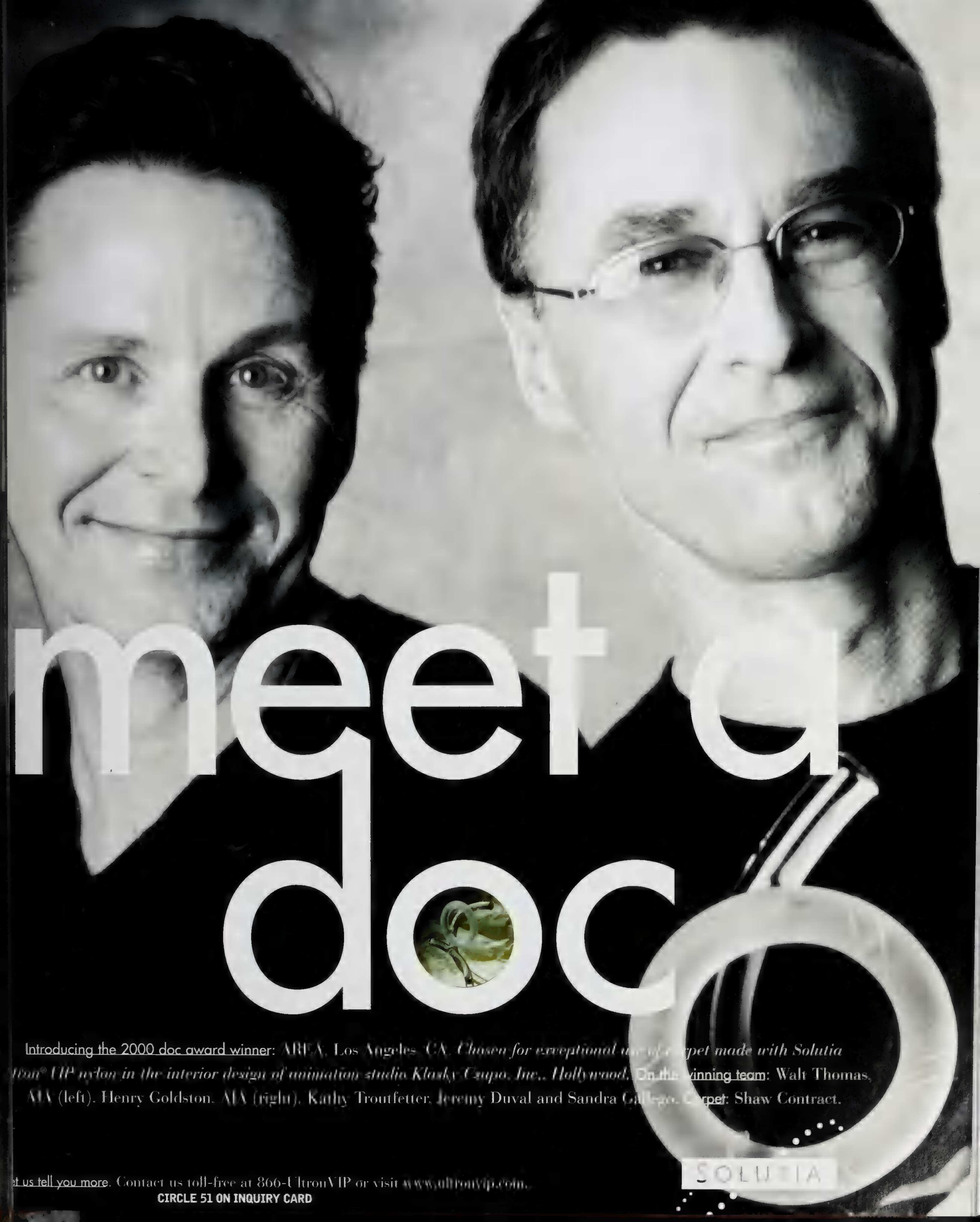

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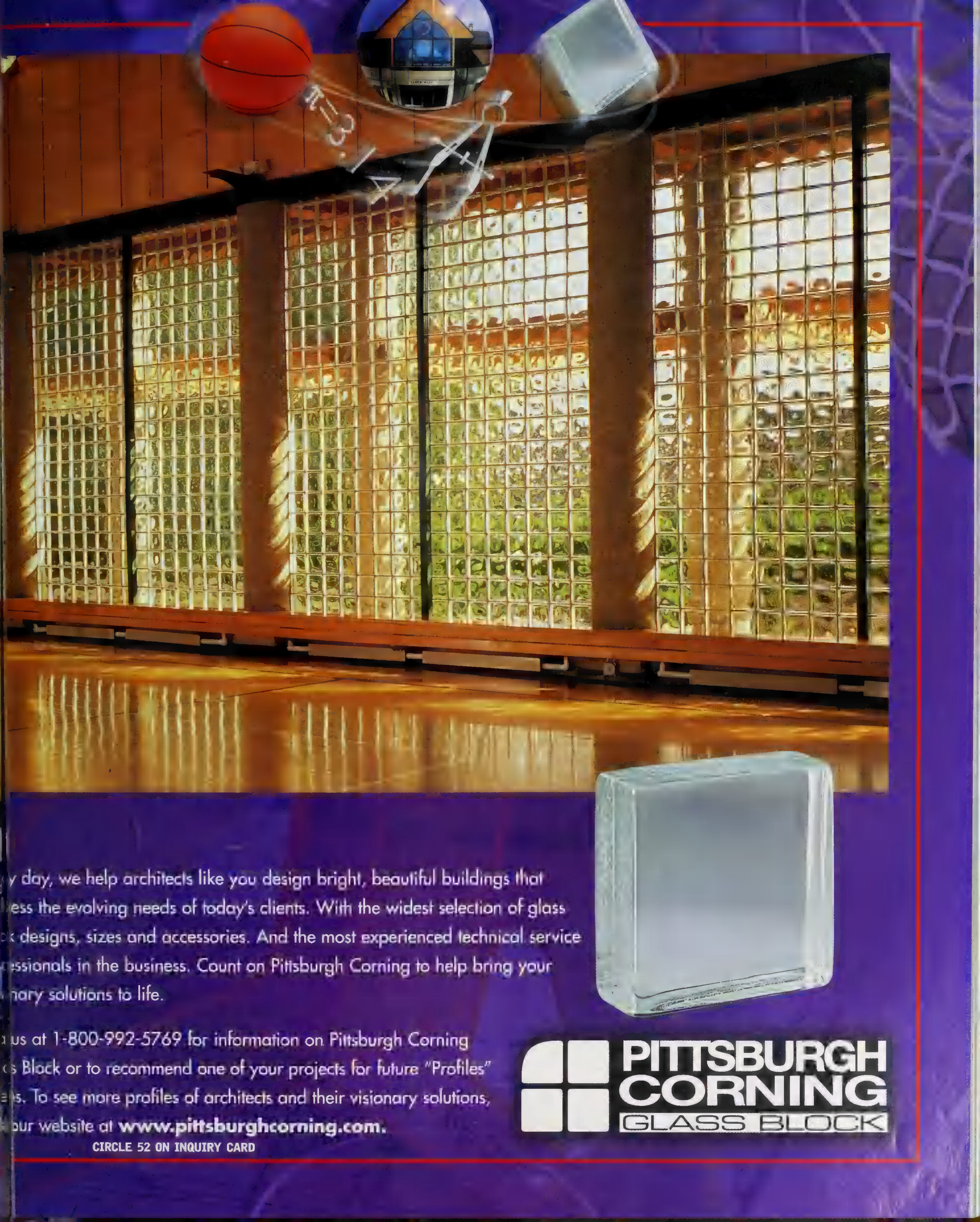

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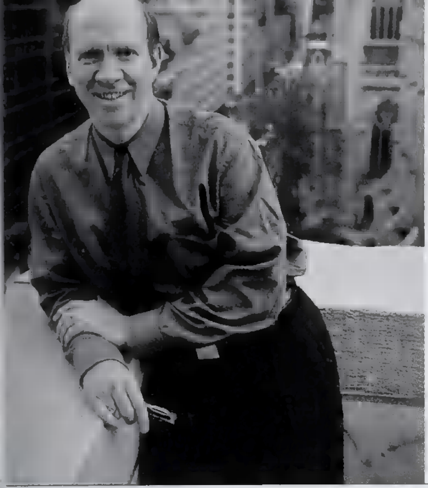

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Editorial

By Robert Ivy, FAIA

The Farnsworth house is for sale. For sale? How, you ask, could this iconic structure by Ludwig Mies van der Rohe, arguably one of the greatest works of 20th century architecture, be on the block? Could his transparent vision be demolished, altered, or closed to the public? It could, if it were to pass into unsympathetic private hands. Despite the enlightened stewardship of its current owner, Lord Peter Palumbo, the ultimate plight of this occasional residence and house museum, like the future of other historic masterworks, is as tenuous as the next real estate transaction, as fragile as a legislative roll call. In the world of historic properties, there are no guarantees.

Dirk Lohan, Chicago architect and Mies van der Rohe's grandson, considers the Farnsworth house "quintessential Mies, [a structure that] makes no compromise." Raised like a dialogue between the human intellect and nature above the banks of the Fox River in Plano, Ill., the steel and glass structure hovers above the ground, as a Greek temple rests on a plinth. Franz Schulze, writing about the relation of building to site, caught its spirit: "The chaste geometry of the house and the impeccable proportions of its parts are expressive of a human presence held in counterpoise with the woody natural surround." Constructed for Dr. Edith Farnsworth in 1946-1951, it was Mies' first American house; American architecture evolved for the next half-century, in part, because of what the architect distilled there.

Fortunately, a strong group of Illinois leaders has adopted the Farnsworth cause and are taking it to the barricades. John Bryan, chairman of the Sara Lee Corporation, believes that "there is no question that this house should be owned by the public." Bryan, an art patron, heads a group of devotees, including Lohan, called "Friends of the Farnsworth House." They intend to convince the Illinois legislature to purchase the house from Palumbo and to place the house in the state's architectural treasury. Under the vision of former governor Jim Thompson, Illinois has purchased and maintains other great works of architecture of the near past, including Frank Lloyd Wright's Dana-Thomas house in Springfield.

Unfortunately, not all states have such an appreciation for their cultural heritage, and historic properties continue to be assailed. Some burn, such as Bruce Goff's irreplaceable Joe Price house in Oklahoma. The future of Michael Graves' Snyderman house in Indiana, featured in this issue [page 169], may be in doubt, as are the Aalto rooms at 809 United Nations Plaza. And in Bannockburn, Ill., an owner has recently applied for a permit to demolish Wright's last design—a critical Usonian house. Who can ride in to the rescue? With the withdrawal of government funding, the National Trust for Historic Preservation, which maintains 20 buildings in its collection (such as Wright's Robie house in Chicago and that architect's home and studio in Oak Park), can only accept significant buildings that come with their own dowries. It costs money to buy them, but more to maintain and staff them.

Architects have sometimes taken a lofty view of their legacy. Mies was not interested in the historic preservation of his own work. "I leave it for others, like you, to deal with when I'm gone," he said to Lohan. Nevertheless, the drapes soon thinned and the river rose. The house required renovation following flooding in 1996 [see News, APRIL 2001, page 34], as well as personnel to manage the house for its limited number of visitors for the last several years.

What can architects do to save the Farnsworth house? Prospects for its successful transition to a state property look good, but the issue is far from settled. Bryan encourages architects to send a check and, perhaps more importantly, to write the Friends and voice support. A good Web site makes it easier to do both (see www.farnsworthhousefriends.org). Write, and write a check. For those other worthy historic properties teetering on the brink of extinction, we can be leaders, as lovers, by valuing and honoring what we have made. The highest price for our history is not sale, but loss.

Robert Ivy

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CIRCLE 53 ON INQUIRY CARD

Letters

In memorium

Architect Morris Lapidus, who passed away on January 18, 2001, will be remembered for his many hotel buildings, and for his excellent book on the practice of architecture, *Architecture: A Profession and a Business*. It was and probably still is the best book on the practice of architecture.

In his book, Lapidus writes, "Architecture as a profession is fascinating and fulfilling; as a business it is demanding and difficult." I have never heard or read a better description of the practice of architecture.

—John J. Brennan
Hagerstown, Md.

The verdict is in

I am writing in praise of your article on the Phoenix Courthouse [Projects, MARCH 2001, page 92]. You have combined a fine sense of language with a carefully crafted array of photographs and drawings in a masterful presentation that transcends the limits of the requisite eight-page format.

This article was particularly striking to me, in contrast to the general fare served by the magazine. To be honest, I have never been a proponent of RECORD. I've often found that it lacks point of view and does not effectively respond to the epic journey of creating the human environment that is architecture. This piece, on the other hand, demonstrates what an insightful architectural writer can produce.

The thoughtfully chosen photos illuminate the text. For example, the layout of the four elevations side by side allows us to walk around the building. The contrast of the building against the cloudless sky lets us focus on the elevation itself, while the image of the facade in twilight illustrates the vital character of the light as it penetrates the exterior. Each image reinforces the sense of Meier's Apollonian vocabulary of white, light, and line.

My only criticism is that the long-dormant dialogue on the experience of beauty, which you have initiated in other contexts, could have been effectively expanded on in this piece. I believe there is great value in pushing this discussion further. On a more subjective note, I'm not sure I agree with your aesthetic assessment of the flaws in the north facade. Perhaps I'll have to go visit myself to make a more definitive argument.

In closing, I truly want to thank you for your contributions to the discourse, and I look forward to subsequent articles.

—John Springer, FAIA
New York City

The free marketeers

What a great series [Marketing, part I, FEBRUARY 2001, page 66, and part II, MARCH 2001, page 76]—and if I hadn't been there all along, I would have read it with my jaw slack. Who would believe how complex the last 25 years have been? But been there and been doing all that!

It never ceases to amaze me how firms based on predictive ability (as in: "Your building will remain watertight and functional for 50 years") can't figure out a marketing strategy for the next six months. Then again, none of this is easy—or they wouldn't need a public relations consultant, and I wouldn't have had an active firm for 20 years.

—Joan Capelin, HON. FAIA
Capelin Communications, Inc.
New York City

Many heroes in our midst

In her interview with Samuel Mockbee [FEBRUARY 2001, page 76], Andrea Dean asks, "Why haven't other schools adopted the model [of the Rural Studio] for their own use?"

Mockbee took the opportunity to tee off on the caricature of architectural education we're all so familiar with, which was fun to read but which glosses over the fact that there are many design/build community-service programs in architecture schools: some have been influenced by the Rural Studio, and many have been in existence considerably longer.

The ACSA Sourcebook of Community Design Programs at Schools of Architecture in North America lists 15 design/build programs (the list is far from complete) and 47 university-affiliated community design centers.

Community design centers started in the 1960s and several, including Pratt, University of New Mexico, and Ball State, have been in existence since that time. The first design/build program I'm aware of was started at Yale in 1968 by the late Charles Moore. This studio has been directed since its inception by Paul Brouard and has a long tradition of service projects in New Haven (and in the early years, Appalachia). Yale grads have started design/build programs as well. In the early 1970s, Dave Sellers and John Mallory initiated a program at Goddard where the students designed and built all the new college buildings; in 1980 John Connell started the Yestermorrow Design/Build School in 1980 in Vermont. Yestermorrow combines design/build education with community outreach and is currently working with the Make-a-Wish Foundation to build wheelchair-accessible treehouses in national parks.

At the University of Kansas, Dan Rockhill has built with students for decades and has completed a series of affordable houses in Lawrence, Kans., that are among the most elegantly detailed and highly crafted examples of student work anywhere. William Carpenter, who wrote a book in 1996 on design/build in education entitled *Learning by Building*, runs a program at Southern Tech that has built many projects in the Reynoldsville neighborhood of Atlanta, including a community theater. Last summer I worked with Gail Della-Piana and students from Miami University, building a library in a village in Ghana on a program she has run for six years. Stanley Tigerman's Archeworks School in Chicago is based on a community-service model. There are four programs I know of in Canada and others in Europe, the U.S., and Australia.

At the University of Washing-ton, where I teach, I've run a Spring Quarter design/build studio since 1988, working for nonprofit community groups in the Seattle area. During Winter Quarter, Sergio Palleroni and I take students to Mexico, where we have dorms and a studio, and over the past seven years we've built two elementary schools, a health clinic, and a library in the squatter settlements south of Cuernavaca.

It has been a privilege to be involved in many of these programs—it's amazing what students can accomplish if you give them the opportunity. Most of these programs are in constant fund-raising mode, and could all use the boost that media coverage provides. The Rural Studio is a topflight operation—I've visited many times as lecturer, reviewer, and graduation speaker so I have firsthand experience. However, it's time the architectural press realized it's not an isolated phenomenon but part of a movement that has been building in architectural education for over 30 years.

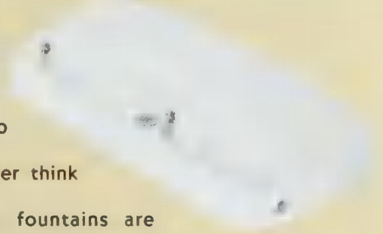
—Steve Badanes
Howard S. Wright Professor
University of Washington
partner/Jersey Devil Design/Build Collaborative

Correction

The LC5 sofa in Product Briefs in the March 2001 issue was designed by Le Corbusier in 1934 and put into production by Cassina in 1974.

Letters go to: rivy@mcgraw-hill.com

You don't get to be the leader by screwing off.



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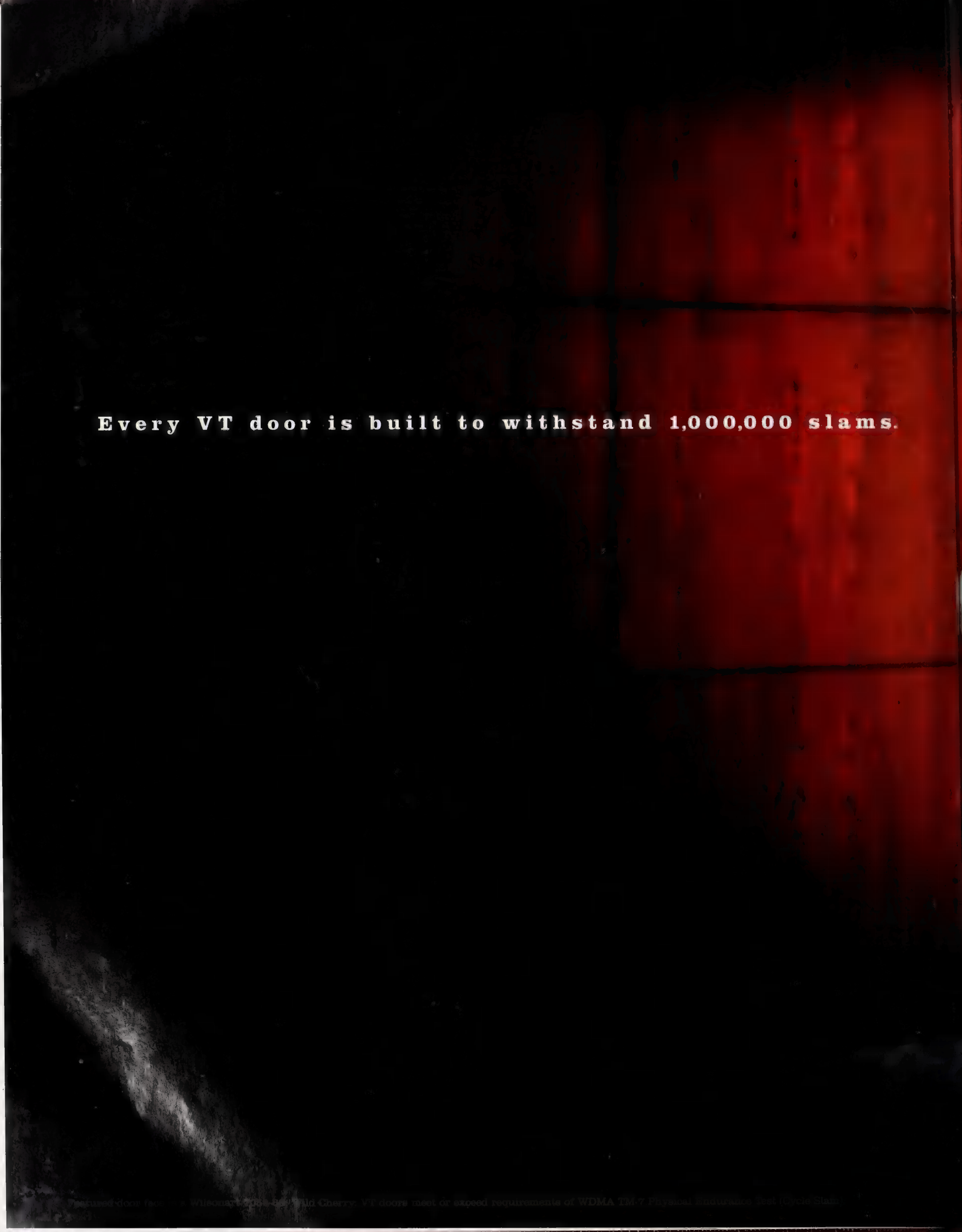

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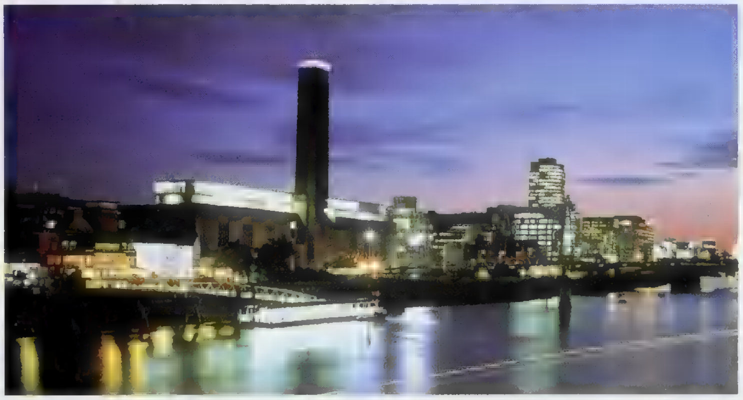
Record News

Highlights Walker addition revealed p. 36
Under the big top at SCI-Arc p. 38
GSA awards good federal design p. 40
Lindy Roy makes splash p. 50

Herzog and de Meuron win 2001 Pritzker Prize

Two architects who have been friends since age seven, went to the same schools, and have shared a practice since 1978 have won the 2001 Pritzker Architecture Prize. Jacques Herzog and Pierre de Meuron are the first partners in practice, and the first Swiss architects, to receive the award (see interview with Herzog on the following page). They were presented with a $100,000 grant and both received a bronze medallion as the 24th and 25th honorees of the Pritzker Prize in a May 7 ceremony at Thomas Jefferson's Monticello in Charlottesville, Va.



Jacques Herzog (above left) and Pierre de Meuron (above right) have completed projects such as the Gallery of Modern Art for the Tate Museum (top), Ricola factory in France (middle), and Dominus Winery (right) in Napa Valley.

PHOTOGRAPHY: © MARGHERITA SPILUTTINI

"This is the most prestigious and well known prize in the world of architecture," Herzog told RECORD. "When we learned we won the prize, it was an amazing feeling, and we were really overwhelmed."

Herzog and de Meuron, who have a 150-person firm based in Basel, Switzerland, produce work that is distinguished by a willingness to experiment and by research into materiality and building tectonics. "I'd say our work is based on concepts and not on style, taste, or personal preference. It's based on intellectual issues, rather than emotional or stylistic ones," Herzog said.

Herzog and de Meuron's Gallery of Modern Art for the Tate Museum in London [JUNE 2000, page 103], a conversion of the former Bankside power plant, is perhaps their most widely known project. They have had projects built in England, France, Germany, Italy, Spain, Japan, and Switzerland. Their U.S. museum projects are the M.H. de Young Museum in San Francisco, due for completion in 2004, and an extension to the Walker Art Center in Minneapolis (see page 36), which will be complete in 2005. With Rem Koolhaas, they are designing the Prada headquarters in New York.

The Pritzker family, owners of the Hyatt hotel chain, awards the prize. According to the Pritzkers: "The purpose of the Pritzker Architecture Prize is to honor annually a living architect whose built work demonstrates a combination of those qualities of talent, vision, and commitment, which has produced consistent and significant contributions to humanity and the built environment through the art of architecture."

The 2001 Pritzker Prize jury, chaired by J. Carter Brown, included Giovanni Agnelli, Ada Louise Huxtable, Carlos Jimenez, Lord Rothschild, and Jorge Silvetti. In her jury comments, Huxtable said, "The work of Herzog & de Meuron is at once new and timeless, subtle and radical, understated and experimental."

John E. Czarnecki, Assoc. AIA

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1985	**Hans Hollein** Austria
1986	**Gottfried Boehm** Germany
1987	**Kenzo Tange** Japan
1988	**Gordon Bunshaft** United States
	Oscar Niemeyer Brazil
1989	**Frank O. Gehry** United States
1990	**Aldo Rossi** Italy
1991	**Robert Venturi** United States
1992	**Alvaro Siza** Portugal
1993	**Fumihiko Maki** Japan
1994	**Christian de Portzamparc** France
1995	**Tadao Ando** Japan
1996	**Rafael Moneo** Spain
1997	**Sverre Fehn** Norway
1998	**Renzo Piano** Italy
1999	**Sir Norman Foster** Great Britain
2000	**Rem Koolhaas** The Netherlands
2001	**Jacques Herzog and Pierre de Meuron** Switzerland

OFF THE RECORD

Steven Holl Architects has won a competition for Cornell University's College of Architecture, Art and Planning building. Competing firms were Morphosis, Tod Williams Billie Tsien and Associates, and Peter Zumthor.

In his acceptance of an AIA London/UK Excellence in Design Award, British architect Will Alsop said, "Ninety-five percent of current American architecture is crap."

Malcolm Holzman, founding partner of New York firm Hardy Holzman Pfeiffer Associates (HHPA), has been given the 2001 Gold Medal from Tau Sigma Delta, the honor society of architecture and the allied arts.

Cooper Robertson & Partners is completing a Memphis riverfront master plan with Civitas.

Less than $20,000 of the nearly $600,000 needed to purchase and save the Snyderman House [this issue, page 169; OCTOBER 2000, page 38] by Michael Graves, FAIA, has been raised. A condemnation notice was placed on the house in mid-April, and the owner of the property could tear it down at any time.

A committee of Illinois civic leaders, including former Gov. Jim Thompson and Sara Lee Corp. chairman John Bryan, has been formed to urge the state to purchase the Farnsworth House [APRIL 2001, page 34] by Mies van der Rohe. The committee fears that a new owner may move the house or close it to the public. Sotheby's International Realty has appraised the house at about $5 million.

Thompson and Rose was selected for a business school building at the University of South Dakota.

Plans are under way for multiple events in Barcelona next year to celebrate the 150th anniversary of the birth of Antonio Gaudi.

Herzog reflects on Pritzker, practice

Shortly after being named recipient of the 2001 Pritzker Architecture prize (see story, previous page) with his partner in practice Pierre de Meuron, Swiss architect Jacques Herzog spoke with RECORD news editor John Czarnecki, Assoc. AIA.

The de Young Museum by Herzog & de Meuron is planned for San Francisco.

ARCHITECTURAL RECORD: *In looking at the list of past winners, it appears that the Pritzker is often awarded to architects as they are beginning to gain notoriety and acclaim. What does the timing of this award mean to you and Pierre?*

JACQUES HERZOG: We are just at the beginning, and our work has taken a twist quite a few times. What we are doing is exploring the field of architecture. What is architecture? That is our main question and the one thing that keeps us going. We are very keen to go beyond anything and everything we've done so far.

AR: *Your work is a marriage between the worlds of materiality and tectonics on the one hand and very strong intellectual ideas on the other. Is this a healthy marriage?*

JH: Yes, our work captures both worlds. This is what we are after. Architecture is always physical. The spiritual and intellectual sides express themselves in the materiality of architecture. It's not expressed any other way. The physical is dead and boring if it is not rooted in an intellectual discourse.

Herzog & de Meuron's scheme for MoMA.

AR: *You've said that you must embrace the clichés of architecture in order to destroy them. Can you elaborate?*

JH: Essentially, it means that you should not avoid anything. We are not afraid of anything. We examine everything as a [potentially] substantial element for a future project. Paradoxically, nonarchitecture can become architecture. But it's only possible when it undergoes some process of transformation, such as when you discover something that can be looked at in a different way. It's a constant process to deal with the fact that everything is known and unknown at the same time.

AR: *Your experimentation and research leads, in some ways, to leaps of imagination that get built. Can you describe this process and how you convince clients of your approach?*

JH: That's a very tough question. You don't know exactly when you discover something or understand something. This is sometimes more experimental, or sometimes it is just a thought. Sometimes it's resulting from a dialogue within a group. When we are convinced of something, which is rarely the case, I think then we have the energy to convince the client. We then test it, making models and mock-ups, and argue it both intellectually and pragmatically. We don't try to convince them against their will, but we try to win them over—to make them become part of the whole thing.

AR: *The last time an American won the Pritzker Prize was 10 years ago. Do you believe this is a commentary on the state of the art of architecture today?*

JH: I'm sure there will be American winners again, but I think Europe is lucky to have quite a few interesting designers right now. It's interesting if you look at why people from a small country, such as Holland or Portugal, can do interesting work. Maybe it has to do with the niches and the chances you get as a young architect to build your work [in a small country]. The politics of culture and education are very important. What opportunities exist for the younger generation to become visible and to build its work [in a given country]? I think [such opportunities] are important and increasingly available in Europe.

AR: *What lessons, from your experience, would you translate to a younger generation of architects?*

JH: Competitions, even for small things, are a great contribution to the culture of architecture.

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OFF THE RECORD

[illegible] Gallagher, most recently deputy commissioner of strategic planning in Chicago, has been named executive director of the National Capital Planning Commission in Washington, D.C.

[illegible] Partners of Los Angeles has won a competition to create a master plan for Beijing's new central business district. The plan includes 100 million square feet of mixed-use development in more than 500 buildings.

The AIA has selected 72 members to become fellows and seven architects to be honorary fellows of the institute. The honorary fellows are: Juan Navarro Baldeweg, Hon. [illegible], Madrid; Sumet Jumsai, Hon. [illegible], Bangkok; [illegible], Hon. [illegible], Rome; Brian [illegible] Lyons, Hon. [illegible], Halifax; Wladimir Mitrofanoff, Hon. [illegible], Paris; [illegible] Francisco Serrano, Hon. [illegible], Mexico City; Jean-Paul Viguier, Hon. [illegible], Paris.

The New York Four Seasons Hotel has announced that it will renovate its top floors in a new design by the building's original architect, I.M. Pei, [illegible], 84. Pei's original design for the 52-story hotel was never completely realized when the building was erected in the early 1990s. Architect Peter Marino, [illegible], will design the interiors.

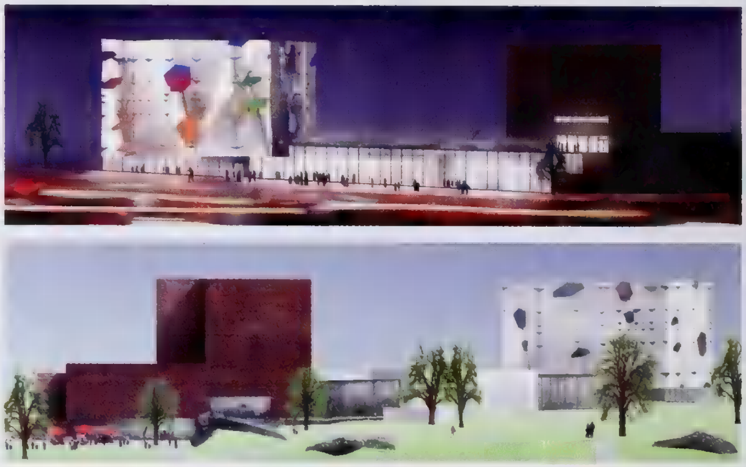
John Higgins will step down this year after 13 years as executive director of the Foundation for Architecture in Philadelphia.

NBBJ of Seattle has been selected for the renovation and expansion of the Museum of Flight in that city.

Founded in 1957, [illegible]an Summern Group (vSG) has been merged into Perkins Eastman Architects. The vSG staff have joined Perkins Eastman Architects' existing office in Stamford, Conn.

Atlanta firm Culpepper, McAuliffe and Meaden is designing a 27-story tower for the Omni Hotel at CNN Center.

Walker Art Center shows addition plans



The five-story Walker addition is similar in scale to the existing building.

Calling the collaboration with the Walker Art Center in Minneapolis "wonderfully creative, invigorating, and challenging," Swiss architects Jacques Herzog and Christine Binswanger of Herzog & de Meuron (see story, page 33, and interview with Herzog, page 34) unveiled their conceptual design for a $90 million, 100,000-square-foot expansion and renovation.

Herzog & de Meuron will create a five-story performance gallery atop a glass-enclosed base that connects new galleries to the existing building. A series of public spaces will link new entrances on Hennepin Avenue with the rest of the museum. New galleries will be in what Herzog calls a "pole of activity" that is "like an answer to Barnes," a reference to the Walker's 1974 brick building designed by Edward Larrabee Barnes. "[We wanted] something of equal weight and dimension so that the whole [would become] stronger," Herzog says.

The inspiration was a simple piece of paper, folded randomly and then cut, like an asymmetrical paper snowflake, then fashioned into a cube. The cube will be clad in a material, although not specified, that will change appearance in daylight.

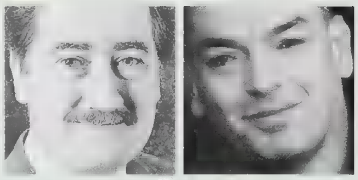
"We're rethinking what it means to be a museum," says Kathy Halbreich, director of the Walker Art Center. "The process is thrilling. The architects are not competitive with the art but deeply appreciative of it."

The architects were asked to design a building that goes beyond mere curatorial exhibition to create a museum where the process of making art and interacting with the artist becomes as much a part of the experience as the viewing of a finished piece. Inside, three levels of balconies surrounding a central performance area function as intimate spaces for exhibition and observation of art in process. On the outside, more than 14,000 square feet of terraces will overlook the Minneapolis Sculpture Garden, which will be increased from 11 to 15 acres by expanding onto land currently occupied by the Guthrie Theater (see story, below) and an insurance company.

Herzog & de Meuron is working with Minneapolis-based Hammel, Green, and Abrahamson on the project. Construction, scheduled to begin in 2003, will be complete in 2005. *Bob Dillon*

Jean Nouvel selected for Guthrie Theater in Minneapolis

French architect Jean Nouvel has been selected as the architect for a new $100 million Guthrie Theater in Minneapolis. This will be Nouvel's most significant project in the United States. The theater's selection committee completed a nine-month search after initially considering 35 candidates. Nouvel has selected the Minneapolis firm Architectural Alliance to be the local firm for the project.



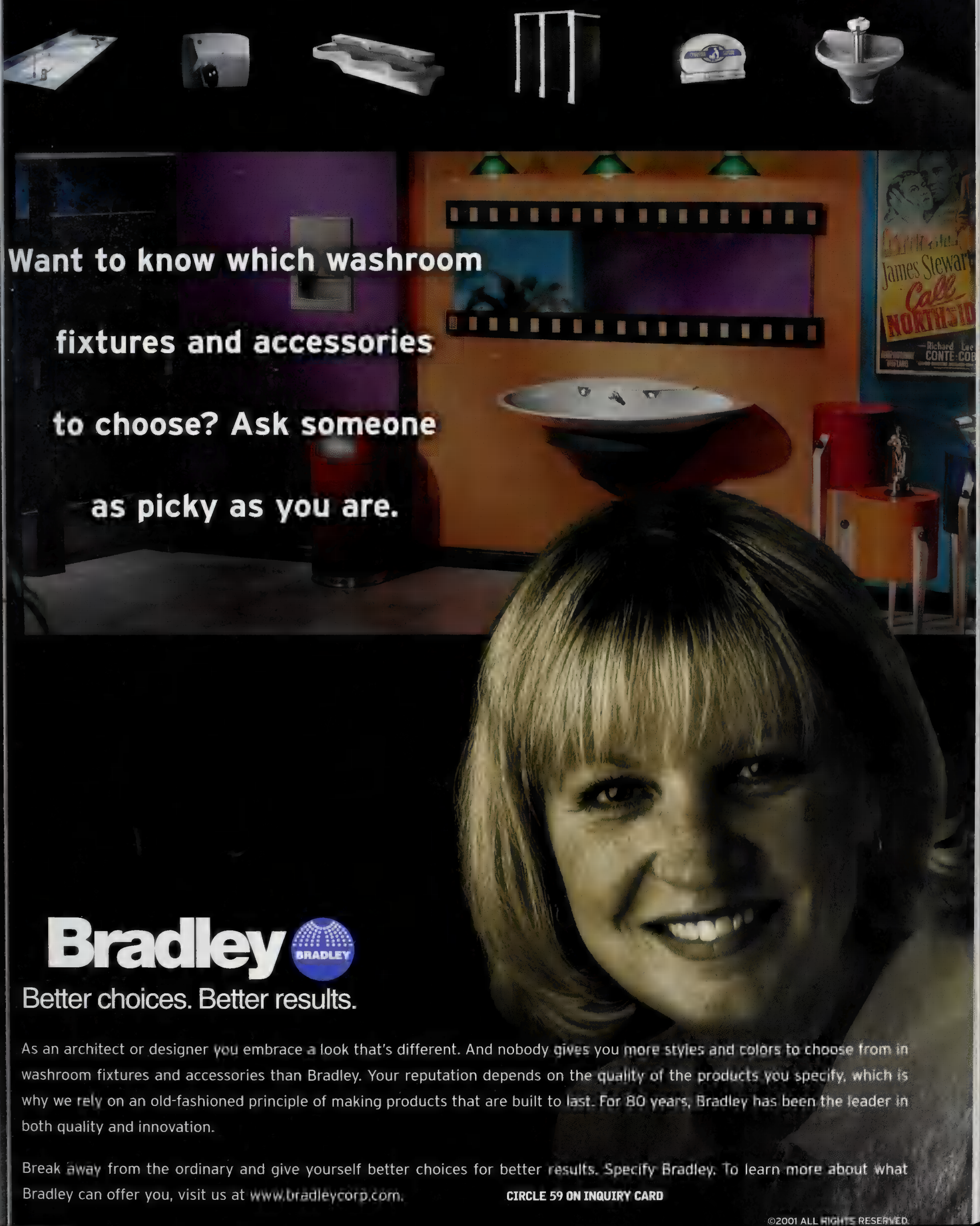
Joe Dowling (left) and Jean Nouvel

The Nouvel-designed theater will be on a new downtown site along the Mississippi River. The existing Guthrie Theater adjacent to the Walker Art Center (see story, above), designed by Minneapolis architect Ralph Rapson in the early 1960s, is likely to be demolished.

"Hard as it is to lose [the existing Guthrie building], both organizations [the Walker and the Guthrie] will be stronger in the end. So, too, will the cultural life of the city," says Joe Dowling, artistic director of the Guthrie Theater.

The new Guthrie will be a three-stage, 210,000-square-foot complex that will include a 1,100-seat main theater, complete with the Guthrie's trademark thrust stage; a 700-seat proscenium stage theater; and a 250-seat flexible theater for new and experimental works. It will also incorporate room for storage, props, and administrative functions that are currently housed in five different Twin Cities locations.

The Guthrie is envisioned as a place of learning for both audiences and actors. "Acting is inspiration," Dowling says, "and I believe that [Nouvel] creates spaces that inspire." ***BD and JEC***



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SCI-Arc camps in downtown L.A. as it prepares for new home in renovated rail depot

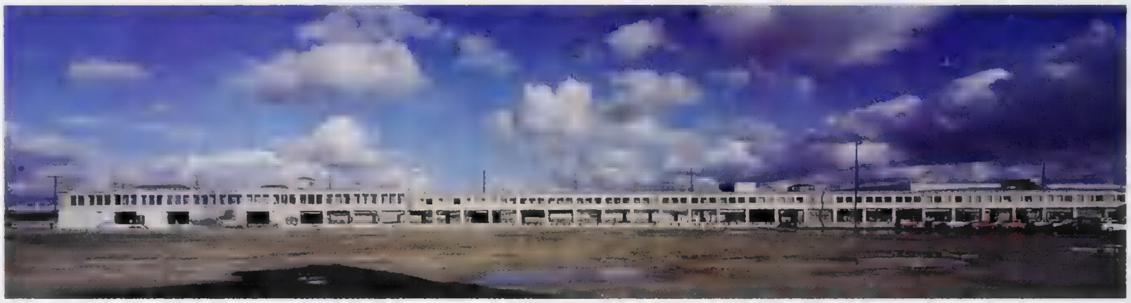
An audience watches images projected on the SCI-Arc tent.

The school year in a tent is coming to a close for the Southern California Institute of Architecture (SCI-Arc). Since fall 2000, SCI-Arc has operated in a massive tensile structure on its new 10-acre downtown Los Angeles campus. The transition has been smooth, though, from the school's former home on Los Angeles' west side to its new home in a renovated rail depot, which will be complete this fall, next to the tent.

While the tent has become a provocative landmark in downtown Los Angeles, it does not meet all of the school's needs. A nearby warehouse is used for exhibit space and an impressive woodshop, and a downtown performance theater is used for special lectures.

A downtown location seems far more consistent with SCI-Arc's philosophy and reputation as an innovative design school than did its former location on Los Angeles' conservative west side. The new SCI-Arc, which will occupy a renovated 1,250-foot-long Santa Fe Railroad freight depot built in 1907, will be the longest architecture school in the world (about the length of a Manhattan block).

The renovation team includes school director Neil Denari, Guthrie + Buresh, Studio Works, the Central Office of Architecture, Ray Kappe, FAIA, Gary Page, and students and faculty. When complete, the SCI-Arc site will include the university, student lofts, and retail, office, and additional residential units.



When renovation is complete, this 1907 Santa Fe Railroad freight depot will be the new SCI-Arc home in downtown L.A.

Denari also considers the relocation and renovation to be an invaluable living laboratory for the 385 students and faculty alike and noted that enrollment applications are at an all-time high.

The built-out studio spaces and normal activity taking place inside the tensile structure belie the makeshift character of its exterior. In true SCI-Arc fashion, faculty and students have funneled the tension of impermanence into creative energy.

One alumnus noted, "Even with less than perfect conditions, SCI-Arc students continue to produce the most innovative work on the West Coast." *Danette Riddle*

Diller + Scofidio chosen for its first major U.S. project: Boston's ICA

Elizabeth Diller and Ricardo Scofidio.

The New York-based firm Diller + Scofidio has won a competition for its first major museum project in the United States, the new Institute of Contemporary Art (ICA) in Boston. The Trustees of the ICA, in a unanimous decision, chose the husband-and-wife team of Elizabeth Diller and Ricardo Scofidio for the 60,000-square-foot, $35 million museum. The ICA, which would be the first museum to be built in Boston in nearly a century, is scheduled to open in 2004.

Diller + Scofidio, the first architects to receive the MacArthur Foundation's "genius" grant, may be best known in New York for their interior renovation of the Brasserie restaurant in Mies van der Rohe's Seagram Building. "Elizabeth Diller and Ricardo Scofidio have demonstrated that they are capable, ambitious, innovative, and sensitive to our program, our site, and the needs of the public," said Jill Medvedow, James Sachs Plaut Director of the ICA.

"One of the biggest challenges will be figuring out how to handle the crowds that come to museums today without losing the intimate experience that people want from a museum," Diller told RECORD. "[Another challenge will be] how to make a contemporary art museum that still feels contemporary 15 years from now."

Invited firms in the competition were Office dA of Boston, Studio Granda of Reykjavik, Iceland, and Peter Zumthor of Haldenstein, Switzerland. The ICA's architecture selection committee visited completed projects by all four finalists.

The ICA will sit on the waterfront cove of Boston's Fan Pier development, which could be the largest waterfront project in Boston's history. Proposed by Chicago's Nicholas J. Pritzker, it's planned as a $1 billion development on the South Boston waterfront, adjacent to the U.S. Courthouse by Pei Cobb Freed and Partners. The Pritzker family, owners of the Hyatt hotel chain, assembled the land over a number of years. Besides the ICA, the Pritzkers are planning just under 3 million square feet of development in eight buildings, including offices, retail, approximately 650 condominiums, and two Hyatt hotels. Michael Van Valkenburgh Associates will design the parks and streetscapes. *JEC and Clifford Pearson* e Great Pyramids

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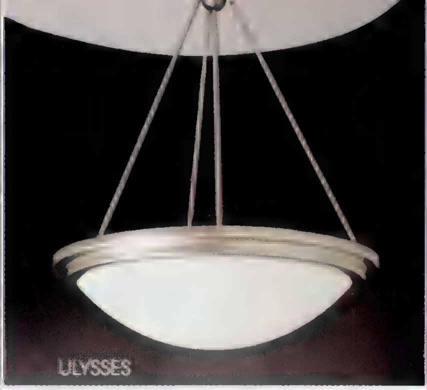
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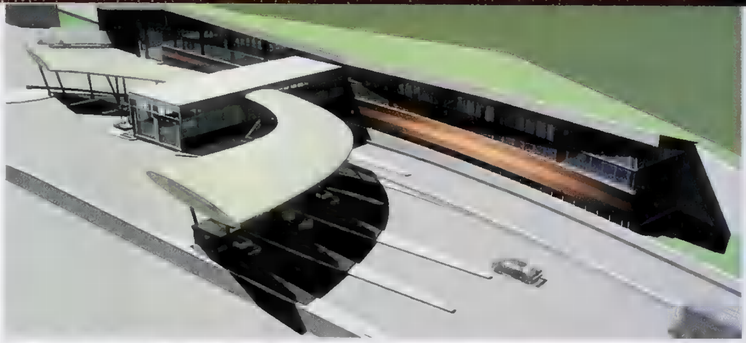
GSA honors 18 federal projects, including 11 courthouses, with its 2000 Design Awards



(from left) Lloyd D. George U.S. Courthouse in Las Vegas; U.S. Port of Entry for Sault Sainte Marie, Mich.; and "Jurisprudents" in East St. Louis, Ill.

The last decade has seen a boom in construction of federal courthouses. Sixty judicial projects worth more than $500 million have been built or are planned. The General Services Administration honored 18 federal projects, 11 of them courthouses, with its 2000 Design Awards.

Honor awards were given for the Lloyd D. George U.S. Courthouse, Las Vegas, by Cannon Dworsky (architecture award); U.S. Courthouse and Federal Building, Central Islip, N.Y., by Richard Meier & Partners and Spector Group (architecture); Sandra Day O'Connor U.S. Courthouse, Phoenix, by Richard Meier & Partners and Langdon Wilson Architects (architecture); U.S. Geological Survey Chiller Replacement, Reston, Va., by JVP Engineers (engineering/technology/energy); "Jurisprudents" sculpture at Melvin Price U.S. Courthouse, East St. Louis, Ill., by Helmick & Schechter Sculpture (art); Charles Evans Whittaker U.S. Courthouse, Kansas City, by J.E. Dunn Construction (construction excellence); U.S. Port of Entry, Blaine, Wash., by Derek Wright, Intermountain Construction (construction excellence).

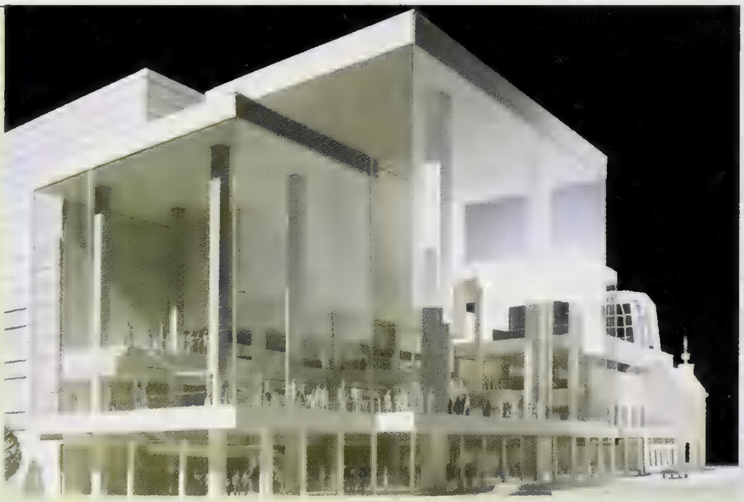
Citiations were given to the following 11 projects: William J. Nealon Federal Building and U.S. Courthouse, Scranton, Pa., by Bohlin Cywinski Jackson Architects; U.S. Courthouse, Hammond, Ind., by Pei Cobb Freed & Partners Architects; U.S. Port of Entry, Sault Sainte Marie, Mich., by Ross Barney + Jankowski; U.S. Post Office and Courthouse, Pittsburgh, by Shalom Baranes Associates; Phillip Burton Federal Building and U.S. Courthouse Plaza, San Francisco, by Della Vale + Bernheimer Design; David Skaggs Federal Building, Boulder, Colo., by E. Cube; restoration of George Segal's sculpture, The Restaurant, Buffalo, N.Y., by Johnson Atelier; Urns of Justice at U.S. Courthouse, Lafayette, La., by Diana K. Moore, artist; Print Materials for Dedication of Tom Otterness sculpture, Rockman, Minn., by Katherine Sechler Stephenson, GSA/PBS Business Development; IRS Computing Center Works of Art brochure, Martinsburg, W.Va., by Creative Intelligence Agency; U.S. Courthouse, Fort Myers, Fla., by Centex Rooney Construction Company. *JEC*

Pelli conducts an overture in Madison

An expanded performing-arts complex designed by Cesar Pelli & Associates will reshape the cultural core of Madison, Wis. Unifying the existing downtown Civic Center block, the $100 million Overture Center combines new construction and the renovation of historic buildings to form a 385,000-square-foot complex fronting State Street, a major pedestrian-only street that connects the state capitol and the University of Wisconsin campus. Phased construction is slated to begin in June with completion targeted for 2005.

The project will use the facade of the 1924 Yost-Kessenich department store to anchor the main entrance of the center. An arrival rotunda topped by a modern glass dome will be illuminated at night as a signature beacon. Pelli's master plan builds on major elements of the existing Civic Center, a complex of theaters and gallery spaces which Hardy Holzman Pfeiffer Associates carved out of historic buildings in 1980.

The Oscar Mayer Theater, housed within the 1928 Hispano-Moorish movie palace by architects Rapp and Rapp, will be renovated as a performance venue seating 415 at the orchestra level and 375 in the balcony. Historic features, such as an organ, ornate stenciled ceiling, and proscenium arch, will be maintained. The Isthmus Playhouse, tucked into former retail space, will be renovated as a 350-seat thrust theater for the Madison Repertory Theater. The project will add three black-box spaces and support areas and wrap the playhouse facade with a curved wall. The adjacent Madison Art Center will be expanded with a 220-seat lecture hall and new galleries.



The project's largest new component, the 2,250-seat Overture Hall, will support productions by the Madison Symphony Orchestra, Madison Opera, and touring companies. With a modernist glass facade (above) trimmed with limestone and Kasota stone, the new venue will rise at the eastern edge of the site where its large volume is closer to taller downtown buildings.

The nonprofit Overture Development Corporation will fund the project using tax-exempt revenue bonds, with credit support for the debt provided by a financial gift from Madison businessman W. Jerome Frautschi. The Madison-based architects for the project are Potter Lawson and Flad & Associates. *William Weathersby, Jr.*

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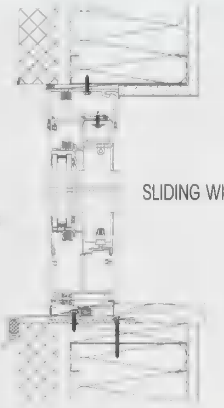

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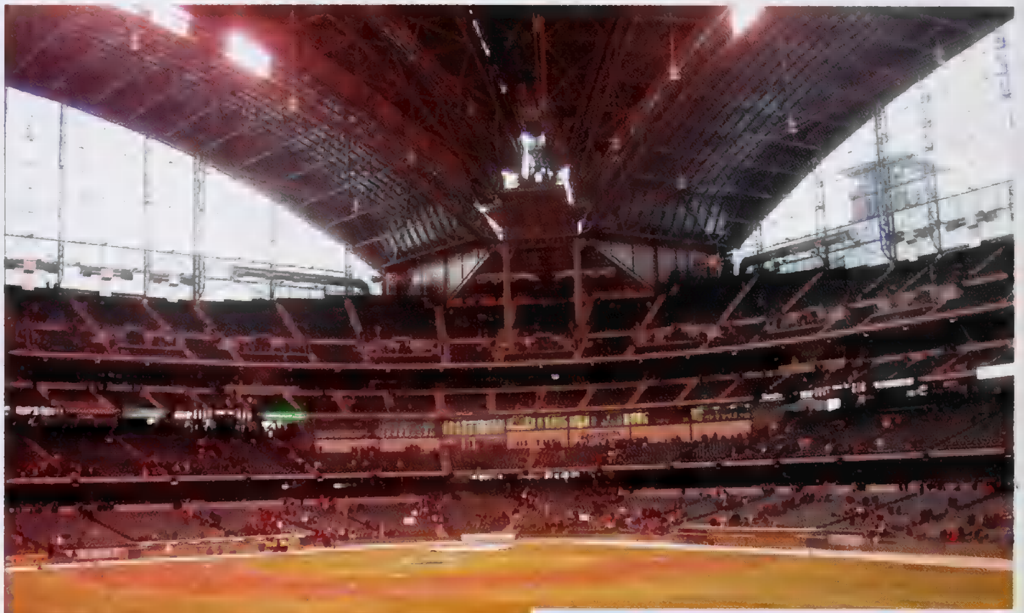


Inside Miller Park in Milwaukee (top). The last section of Milwaukee County Stadium was taken down in February (above), with Miller Park in the background. Inside Pittsburgh's PNC Park (below).

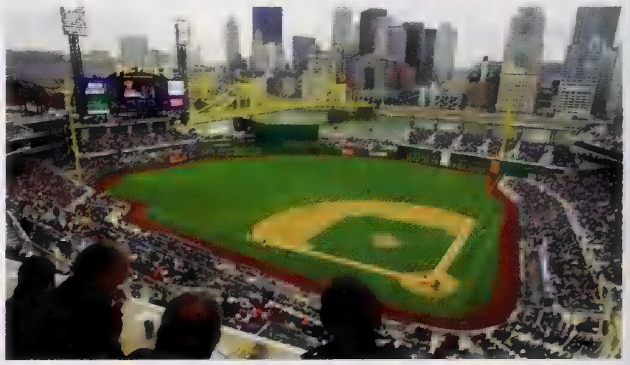
New ballparks open in Milwaukee and Pittsburgh

The wave of new major-league baseball parks of the last decade continues with two new ballparks opening for the Milwaukee Brewers and Pittsburgh Pirates this season. Both ballparks, intended to bolster attendance and keep struggling small-market teams from moving, are built adjacent to the stadiums they replace. Pittsburgh's PNC Park offers sweeping views of the Allegheny River and downtown, and Milwaukee's Miller Park has the only fan-shaped convertible roof in North America.

The Miller Park roof covers a 43,000-seat ballpark designed by HKS of Dallas with NBBJ of Los Angeles and Eppstein Uhen Architects of Milwaukee. The seven-panel roof, which weighs 12,800 tons and covers 10.5 acres, opens and closes in 10 minutes on a pivot point behind home plate. Mitsubishi designed and built the roof panels, and Arup was the structural engineer. The roof added considerable cost to the $400 million ballpark, but it was essential for owner Bud Selig to keep the Brewers in Milwaukee.

PNC Park, designed by HOK Sport of Kansas City and L.D. Astorino & Associates of Pittsburgh, cost $262 million. With 38,000 seats, PNC Park is the smallest of the new ballparks; only Boston's Fenway Park is smaller. The Pittsburgh ballpark, a short walk across the Roberto Clemente Bridge from downtown, is more urban in character than Miller Park.

Milwaukee-based Miller Brewing paid for the naming rights of Miller Park, and Pittsburgh-based PNC Financial Services Group did the same for PNC Park. Miller Park replaces Milwaukee County Stadium, which opened in 1953. PNC Park replaces 30-year-old Three Rivers Stadium, which was home to both the Pirates and Steelers. A new football stadium for the Steelers will open next to PNC Park this fall. *JEC*



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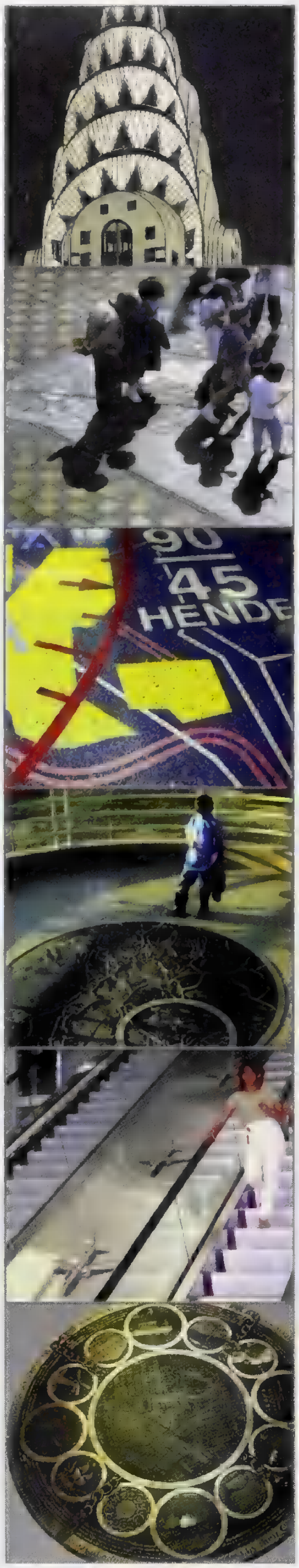

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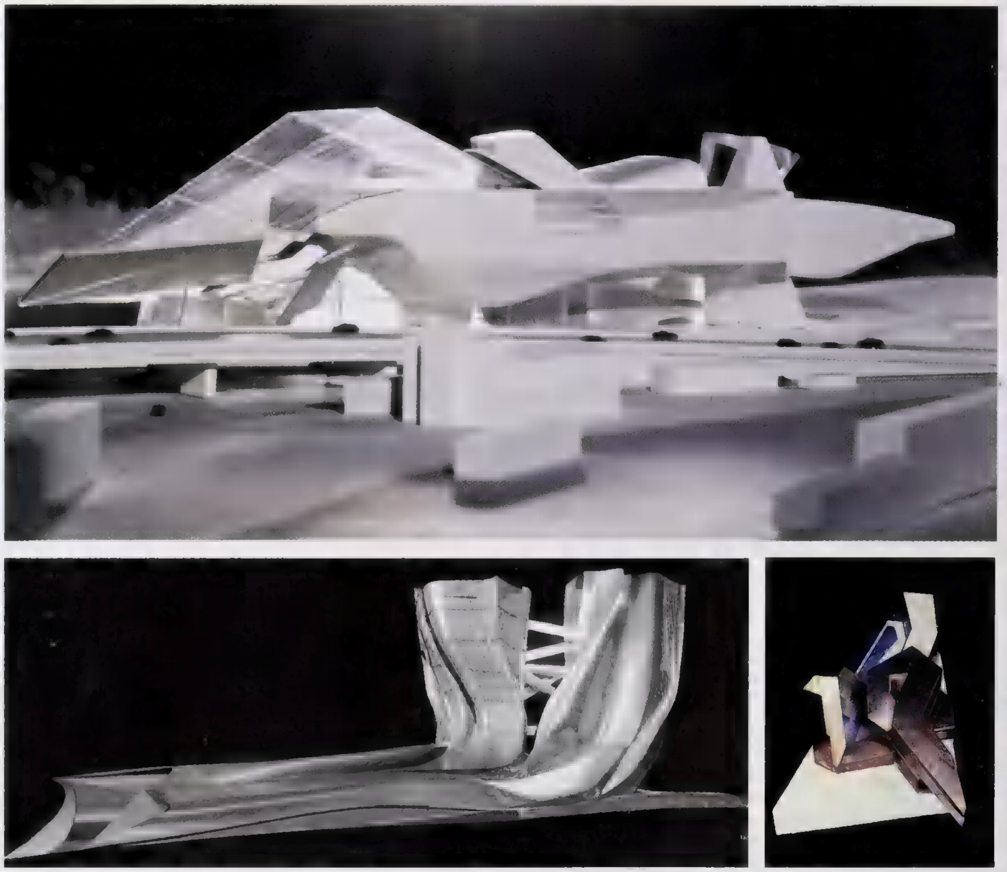
Coop Himmelblau's "Crystal Cloud of Knowledge" wins competition for science museum in Lyon, France



Coop Himmelblau's scheme (top) won the competition for a science museum in Lyon, France. Among the seven finalists were Peter Eisenman (design, above left) and Steven Holl (design, above right).

The "Crystal Cloud of Knowledge," by Viennese architects Coop Himmelblau, has been chosen as the winning design in an open competition for a science museum in Lyon, France. The 200,000-square-foot museum will be the centerpiece of a plan to redevelop onetime industrial land prominently situated at the confluence of the city's two rivers. Sponsored by the Conseil Général du Rhône, the regional government of Lyon, the $56 million museum will likely open in 2005.

Coop Himmelblau's design features an amorphous, cloudlike structure containing exhibition spaces. The main volume appears to float over an angled glass base containing vestibules and service entrances.

Seven schemes made it to the final round of the competition, including an organic, twin-towered gateway design by Eisenman Architects and museum specialist Felice Fanuele, and a proposal featuring a horizontal carpet of fractured and angled roof forms by Barcelona architect Carlos Ferrater and local architect Bruno Demetier. The team of Steven Holl, AIA, and French architect Pierre Vurpas proposed a building that would converge areas which, according to Holl, represent "matter, energy, configuration, and correlation." Other competition finalists were French architects Jacques Ferrier, François Seigneur & Sylvie de la Dure, and Techtoniques and Drevet Architectures.

Architects were challenged to offer new interpretations of the museum as an inviting learning center and popular leisure-time destination capable of attracting 500,000 visitors a year. Coop Himmelblau responded with large areas of what it calls "urban leisure space," both inside and out. For example, "spaces of repose," which lie between exhibit rooms in the cloudlike form, are designed to offer relief from museum fatigue. The main public area of the building will be an interior patio in the form of a double cone, which is tilted at 23.5 degrees, like the axis of the earth's rotation, and lined with a spiraling stair. *David Cohn*

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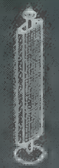

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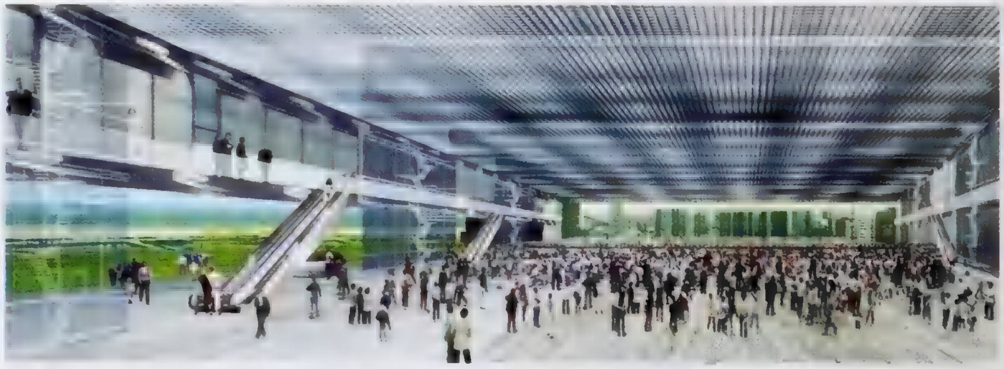


Barcelona selects international architects for 2004 Universal Forum of Cultures' ambitious waterfront redevelopment

The city of Barcelona has commissioned more than 25 well-known local and international architects to design buildings for its upcoming "Universal Forum of Cultures—Barcelona 2004," a UNESCO-backed month-long international conference on themes of cultural diversity and sustainable urban growth. The forum, scheduled from April 23 through September 24, 2004, will have exhibitions, artistic festivals, and dialogues with an agenda based on the Universal Declaration of Human Rights.

With the forum, Barcelona hopes to repeat the winning strategy of the 1992 Olympics, which attracted international attention and stimulated urban renewal. An obsolete industrial area at the mouth of the Besòs River will be redeveloped by the city as the forum site. New permanent infrastructure will include a new area for the Barcelona Zoo, a recreational marina, parks, housing, and university and commercial buildings.

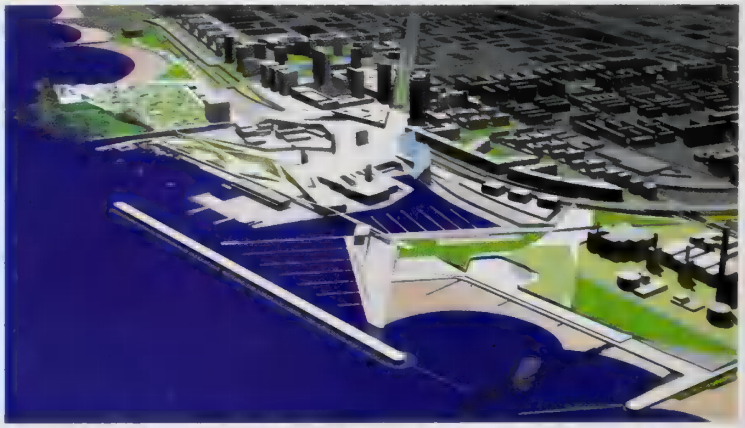
Architects were chosen in a battery of competitions in late 2000. Among the selected architects are Herzog and de Meuron for the Forum's main auditorium; Dutch architects MVRDV with local architect Enric Massip for the zoo's biodiversity pavilion; and Barcelona architects Torres and Martínez-Lapeña for a raised plaza with a photovoltaic pergola.

Other local architects include Josep Lluís Mateo for a convention facility and hotel; Eduardo Bru for the university campus; Clotet and Paricio for an office tower; Aranda Pigem and Vilalta of Girona for a sailing and scuba center; and Beth Galí for the bathing facilities.

Many younger Spanish firms were also tapped. Two parks will be designed by Madrid architects Abalos & Herreros and London-based Alejandro Zaera of Foreign Office Architects. Eight public-housing projects went to, among others, local firms Actar Architects, headed by Manuel Gausa; Bohigas, Pla & Baquero of BOPBAA Architects; and Salvado & Aymerich.

Barcelona has also announced the selection of several international architects for private commercial developments elsewhere in the city and unrelated to the forum. These commissions, the result of a city policy that encourages developers to work with recognized architects, include a hotel and a leisure center in a former bullring by British architect Richard Rogers, and office buildings by French architects Jean Nouvel and Dominique Perrault. *DC*

Plans for "Universal Forum of Cultures—Barcelona 2004" include a convention hall (above) by Josep Lluís Mateo. The redeveloped waterfront (right) will have a new marina, zoo, housing, and commercial buildings. Herzog and de Meuron will design an auditorium.



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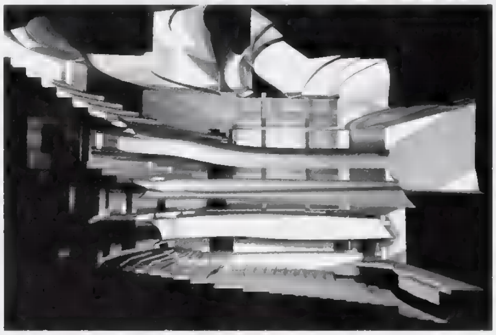
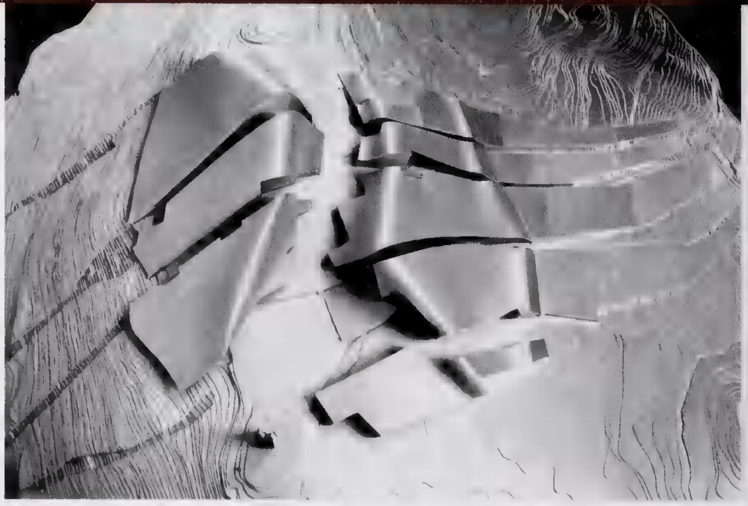
Eisenman believes that the City of Culture in Galicia will place him with Gehry, Moneo

In unveiling his design last month for the City of Culture in Galicia, Spain, Peter Eisenman, FAIA, said he believes the complex will be one of the three most important recent architectural projects in Spain, next to the work of Rafael Moneo and Frank Gehry's Guggenheim Bilbao. No need to be modest here. When completed, this $125 million, six-building center could become a cultural mecca and economic boon for the town of Santiago de Compostela.

Ground was broken earlier this year for the complex, located on a hill above Santiago de Compostela, the capital of the Galicia region, about 300 miles from Bilbao. The Fundación Cidade de Cultura de Galicia is developing the project, which will include a museum of Galician history, a new technology center, a 1,500-seat music theater, a Galician library and periodicals archive, a central services and administration building, and an arboretum. Construction has begun, and the first buildings will open in 2003.


The fluid, sweeping music theater will seat 1,500.


The six buildings are conceived as organic, curving forms in the hillside.

The exterior forms of the buildings, developed through three-dimensional graphic layering of the existing topography with the grid of Santiago, are designed to appear as if they have grown organically from the landscape. "Instead of the ground being conceived as a backdrop against which the buildings stand out as figures, we generated a condition in which the ground can rear up to become a figure itself [and] buildings can subside into the ground," Eisenman says. "It is a new kind of urban fabric."

Eisenman won the commission in a 1999 competition. Others competing were Ricardo Bofill, José Manuel Gallego, Annette Gigon and Mike Guyer, Steven Holl, Rem Koolhaas, Daniel Libeskind, Juan Navarro Baldeweg, Jean Nouvel, Dominique Perrault, and César Portela. *JEC*

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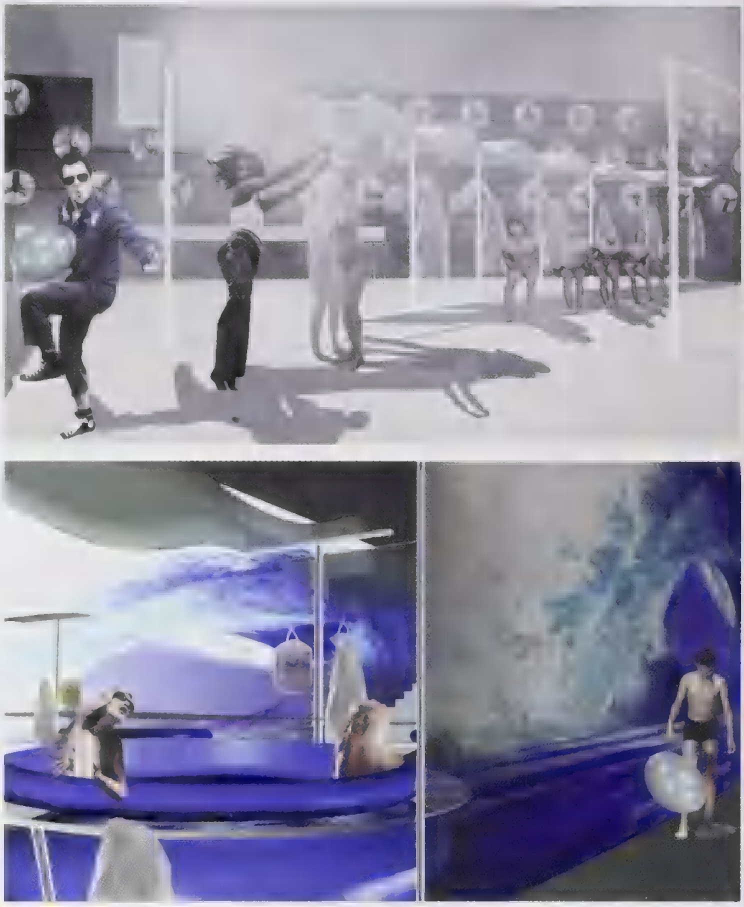
Design by ROY to make a splash at P.S.1

New York architecture firm ROY, whose principal is Lindy Roy, has won the second annual MoMA/P.S.1 Young Architect Program. The program is an invited competition for young architects to design a temporary built project for the courtyard of P.S.1, a center for contemporary art in Long Island City, Queens, N.Y. The space designed by ROY, to be installed by July 1, will include pools, hammocks, spray misters, and walls of fans for relaxation. Competition entrants were asked to make the best use of P.S.1's outdoor space and available materials within a $50,000 budget.

"The design had to function optimally under two extreme conditions: weekdays when there are just a few people relaxing and weekends when thousands of people will use the space," Roy says. "We pushed the idea of total environment." The ROY environment has three main components: climate, activity, and supplies. For climate, oscillating fans on timers will create varying wind conditions, spray misters will cool people, and a metallic tent fabric will provide shade. For activity, a number of hammocks and inflatable pools will provide a therapeutic respite from the city. ROY also designed supplies as companion pieces for the environment, including water bottles, T-shirts, and hats.

Lindy Roy was one of five finalists, including Architectonics, Materialab, Studio Sumo, and System Architects. An exhibition of the finalists' proposals is being planned for P.S.1.

After working with Peter Eisenman, Roy started her own firm in 1999. *JEC*



ROY's setting includes fans and spray misters (top) and inflated pools (above).

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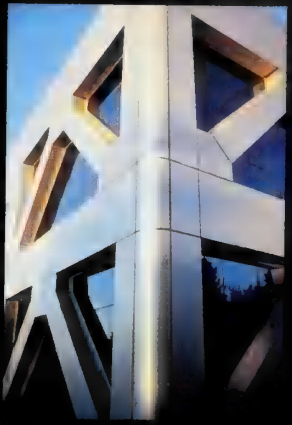

A Panel Discussion

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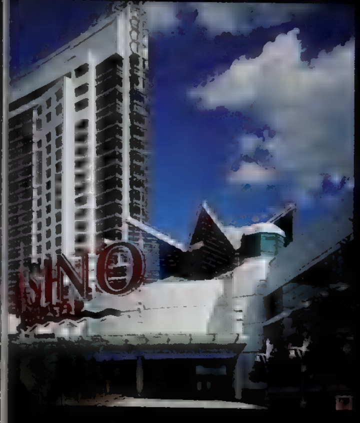
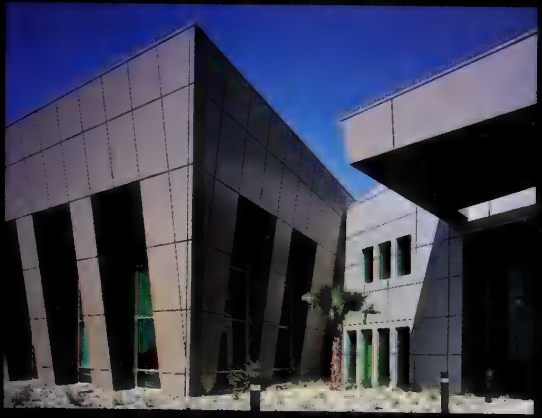
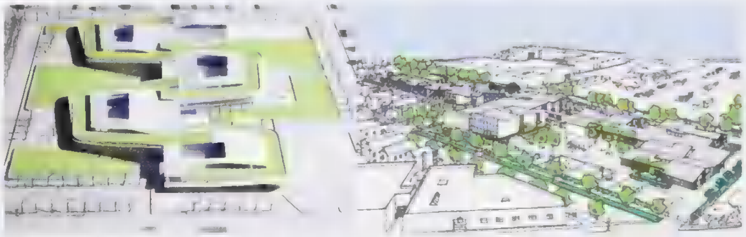




Two win "Big Shoulders, Small Schools" Two architecture firms from outside Chicago have been selected to design two new Chicago public schools. Koning Eizenberg Architecture of Santa Monica, Calif., and Marble Fairbanks Architects of New York City have won the "Big Shoulders, Small Schools" competition. The competition sought entries that were architecturally innovative, accessible, and energy efficient. Each of the two schools will house approximately 800 students, 20 percent of whom are disabled. A number of organizations sponsored the competition, including the Chicago Public Schools and Business and Professional People for the Public Interest. Other competing architects were Jack L. Gordon Architects; Lubrano Ciavarra Design; Craig Borum, Karl Daubmann, and Oliva Hyde; Ross Barney + Jankowski; Mack Scogin Merrill Elam Architects; and Smith-Miller + Hawkinson Architects.



Competition-winning entries by Marble Fairbanks (left) and Koning Eizenberg.

L'Atelier includes sleek dining and exhibition space for Renault.

Renault revs up its new Paris showcase French car manufacturer Renault launched its sparkling successor to the timeworn Pub Renault. After two years under wraps, the revamped and renamed restaurant and exhibition space, L'Atelier, on the Champs-Elysées opened recently at a cost of about $5.6 million. French architect Franck Hammoutène, winner of the 1998 open competition to redesign Renault's flagship exhibition space, aimed for a flexible and open design where established and up-and-coming artists in various fields could present their work. Hammoutène designed the Maison Blanche and L'Etoile restaurants, as well as the Music Museum in Paris. At L'Atelier, glass, polished steel, American elm wood paneling, and a coarse, poured-concrete finish to the columns offer both warm and cool tones.

For a bird's-eye view of events on the ground floor, visitors can wander up to the mezzanine and dine at the 170-seat restaurant that extends over the five cable-supported footbridges crisscrossing the interior. Four of these bridges can be raised to accommodate larger displays on the ground floor. *Robert Such*

HOK designs Georgia Tech science building HOK has designed the 287,000-square-foot Ford Motor Company Environmental Science and Technology Building at Georgia Tech. It will open in fall 2002.

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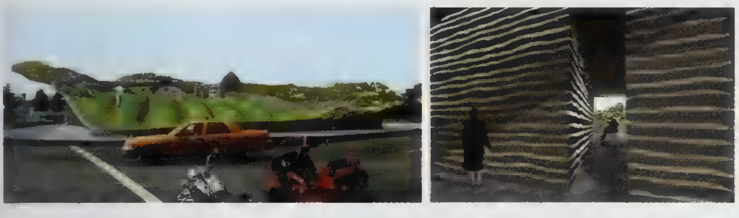
CIRCLE 7 ON INQUIRY CARD

News Briefs

A wee bit of Irish countryside for New York A design for a memorial to the 1840s potato famine in Ireland was unveiled in New York City in March. The Irish Hunger Memorial will appear as a fragment of sloping land, similar to the Irish countryside, on a half-acre site in Battery Park City in Manhattan. Artist Brian Tolle designed the memorial with David Pincuskas and Juergen Riehm of 110 Architect and landscape architect Gail Wittwer. The landscape will lie on a 96-by-170-foot reinforced-concrete platform over a base of alternating bands of translucent resin and stone. The history of the famine, including stories, poetry, and quotes, will be transcribed on the resin. A remnant of an Irish stone cottage and a variety of vegetation indigenous to Ireland will be part of the landscape. The $4.7 million memorial will be dedicated next St. Patrick's Day, March 17, 2002.



The Irish Hunger Memorial will have a landscape (left) above a passage (right).

NCARB initiates prize The National Council of Architectural Registration Boards (NCARB) has announced that it will bestow a new award, the NCARB Prize for Creative Integration of Practice and Education in the Academy. The award will recognize academic programs that best emphasize the continuum between education and practice. Architecture schools with accredited degree programs may submit projects that demonstrate creative ways to bring the academy and profession together in a studio curriculum. Six cash prizes will be awarded, with a $25,000 grand prize and five $7,500 awards. Submissions are due February 1, 2002. Visit www.ncarb.org for more information.

Koonce addresses U.S. mayors Norman Koonce, FAIA, EVP/CEO of the American Institute of Architects, addressed the National Summit for Investment in the New American City in Washington, D.C., in April. The summit convened 60 U.S. mayors and corporate CEOs to explore how the public and private sectors could partner to enhance cities. Koonce presented "Design as a Competitive Asset and Advantage for Cities."

Exhibiting Wright The exhibition *Frank Lloyd Wright and the Art of Japan: The Architect's Other Passion* is on view at the Japan Society of New York through July 15. Tim Culbert and Celia Imrey of Inline Studio designed the exhibition, which includes displays (shown below) built in a similar way to those in an installation by Wright for a 1908 show at the Art Institute of Chicago.

***Wright and the Art of Japan* is on display.**

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CIRCLE 67 ON INQUIRY CARD

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If you ever want to research tile, the Cleveland Library would be a good place to start.

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When Hardy Holzman Pfeiffer Associates, the architect of the Louis Stokes Wing of the Cleveland Public Library expansion project, wanted to create a unique, contemporary and functional addition, Team IMI was able to help. Team IMI worked with the union contractor, Corcoran Tile & Marble, Inc., and the designers to provide the initial shop drawings for the two abstract feature walls which were to be the library's focal points. Ceramic tile would factor heavily into the design due to the numerous contours it employed. Once the design phase was complete, Team IMI and the union craftworkers went to work. In the end, 193,000 pieces of mosaic were handset, piece by piece. All in all, it took 17 of the world's finest union craftworkers 50,000 hours to complete the two 150′ x 12′ walls. The result is a true work of art—an abstract design executed using traditional materials and concepts developed during the construction of the original 1920's structure.

Of course, the Louis Stokes Wing of the Cleveland Public Library is just one example of how Team IMI is making a real impact in the masonry construction industry. Thanks to comprehensive training programs at IMI's National Training Center and around the country at satellite centers, Team IMI is helping to meet the need for skilled union craftworkers and contractors nationwide. Team IMI mobile training units also make it possible to offer specialized training on your job site. And our technical expertise in codes, specifications and design troubleshooting delivers the final piece of the puzzle. In short, with Team IMI, you're assured that the world's best union masonry craftworkers and contractors will always be available for your project, ensuring quality and imagination every step of the way. **To find out more, call 1-800-IMI-0988 or visit www.imiweb.org.**

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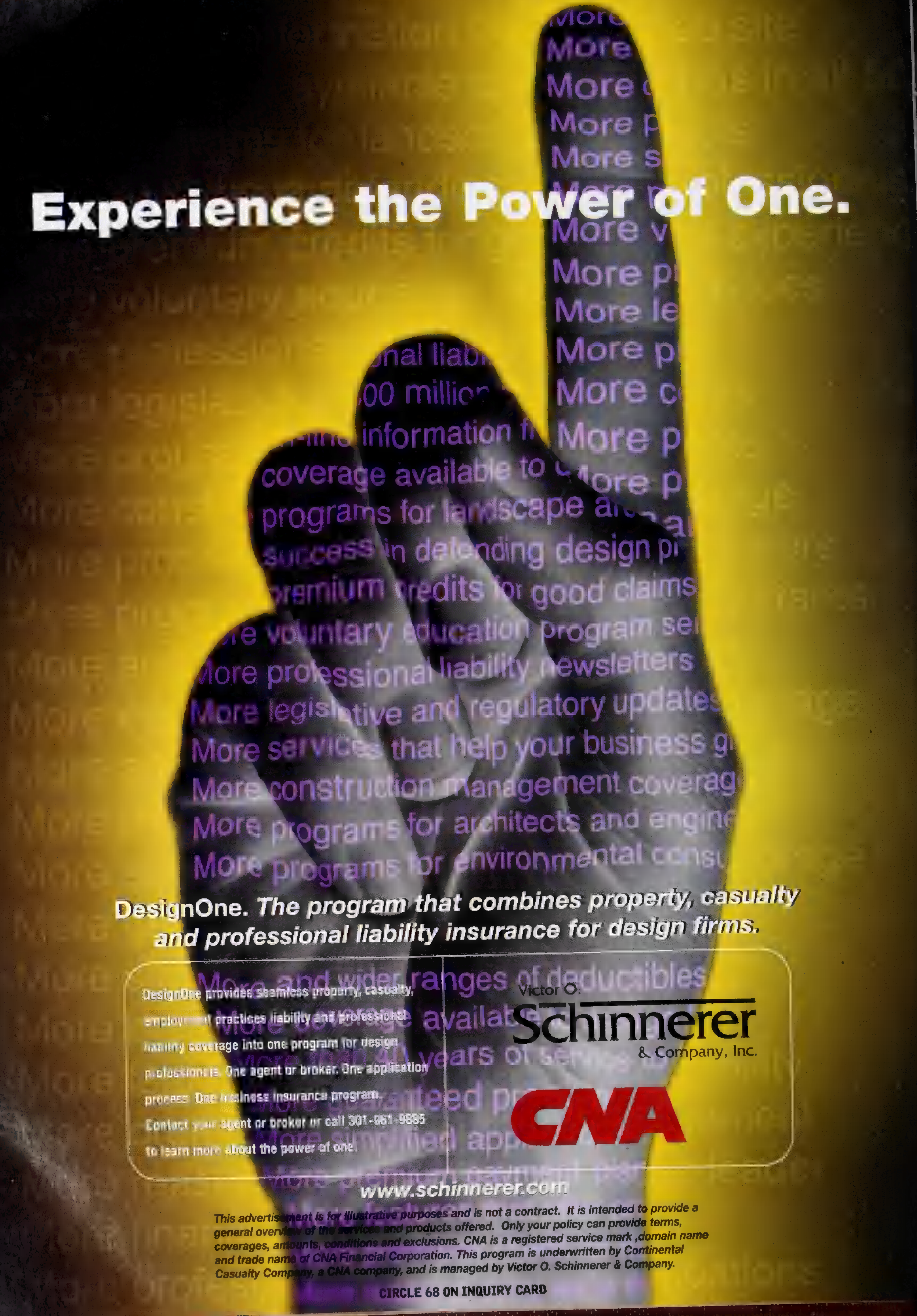
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CIRCLE 68 ON INQUIRY CARD

Colfax Avenue: Celebrating the Main Line through Central Denver

Correspondent's File

By Charles Linn, AIA

Observing the buildings along Colfax Avenue, Denver's 26-mile-long commercial strip, is a bit like looking at a gigantic core sample. One can almost view the complete history of this Rocky Mountain city along its length and see how it has prospered, declined, and, in some cases, has been renewed. The street began in the 1850s as a muddy track running through the middle of town. When streetcars were added, it became a commuter artery and gradually extended west through the city of Lakewood, ending in the foothills of the Rockies, and east through Aurora, where it terminates at the prairie's edge.

Gateway to the Rockies

Looking east across Lakewood toward Denver (1), one can see how much ground Colfax covers: It is about 8 miles from here to the high-rises downtown, another 18 miles before it merges with Interstate 70. Originally, Lakewood comprised farms and orchards, which have all but vanished. But still in evidence are buildings left from the days when Colfax was part of U.S. 40, "the National Road," established during the 1920s. U.S. 40 was one of the first transcontinental highways, and it made Denver "the Gateway to the Rockies." As automobile travel became ubiquitous, dozens of motels, restaurants, and gas stations sprang up along Colfax. A few remnants in west Lakewood are: Lane's Tavern (2), a roadhouse built in the 1920s (in the 1950s it featured draft beer, two for 25 cents); an abandoned tourist cabin (3); and Davies' Chuck Wagon Diner, which opened in 1957 (4).

Although these places have nostalgic appeal, Colfax is not a museum, and Lakewood is trying to bring new residential and commercial development here to keep it healthy. An abandoned K-Mart (5) is slated for this redevelopment mix, as are several empty car lots. The Lakewood Theatre (6), reclaimed as a Harley-Davidson dealership, is one example of a successful adaptive reuse.

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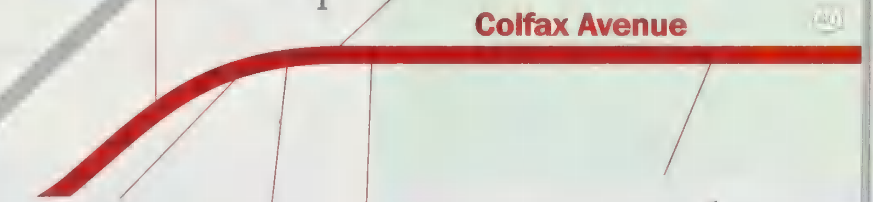

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Correspondent's File

Arvada

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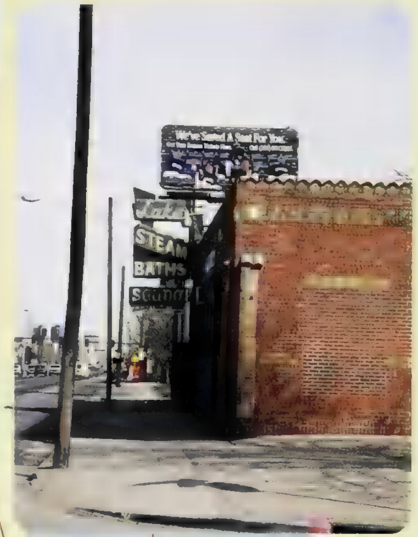

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Lakewood

DENVER

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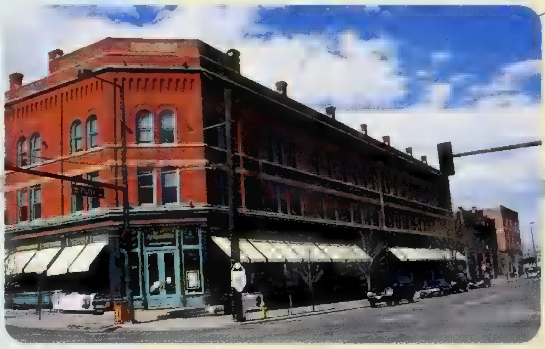

REVIVING DENVER'S LOWER DOWNTOWN

The revitalization of Denver's Lodo district could serve as a blueprint for many cities. Its main lesson is that such a revival demands work on many levels. While sites such as Larimer Square had been doing well for over 20 years, they became even more successful because they are no longer just destinations in themselves: With the construction of facilities for Denver's professional baseball, basketball, hockey teams, and with the expansion of programs at the Denver Center for the Performing Arts, their use has been leveraged. Paralleling Lodo is the South Platte River redevelopment, which transformed a river that had been subjected to industrial abuse for decades into a chain of beautiful parks. New housing between the river and Lodo is now under construction (14). Many of the oldest commercial buildings in lower downtown, once a part of Denver's skid row, (11) are being renovated into shops, galleries, and restaurants.

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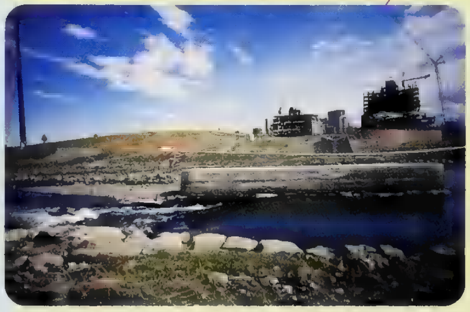

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Artifacts and alterations

Some things, such as this CARS sign in original 1950s Googie lettering (7), suit their purposes so well that they remain untouched. But that doesn't always happen. Another used-car lot's office (13) was formerly a drive-in restaurant shaped like a Conestoga wagon.

Moreover, building decorations are often altered to reflect the preferences of the new owners. The facade of this small shop (8) was originally covered by formal black-glass tile. It has been partially recovered with bright blue faux stone, and a Hispanic-themed mural covers its cinder-block side walls.

As Colfax was widened over the decades, first from two to three, then five, and finally seven lanes, driveways and parking lots that originally fronted most of the buildings gradually narrowed until the distance between the curbs and building fronts was only a few feet. The result can be seen on many storefronts, particularly those that were once gas stations. In some cases, display windows, entrances, and overhead door openings were simply closed up (9), either because the new building occupants did not trade with walk-in traffic or because the noise of automobiles outside made it difficult to do business inside.

Colfax also boasted supper clubs and businesses, such as the Pig'n'Whistle (10), a restaurant, gas station, and motel complex owned by former boxer Eddie Bohn, who entertained guests with impromptu sparring sessions. Bohn is gone, and the restaurant and gas station have fallen into disrepair, although the Pig'n'Whistle motel is still pristine. Other businesses live on long after the cultures that established them have disappeared. Still in operation, for instance, are the Lake Steam Baths, a bathhouse that served a mostly Jewish neighborhood which vanished long ago.

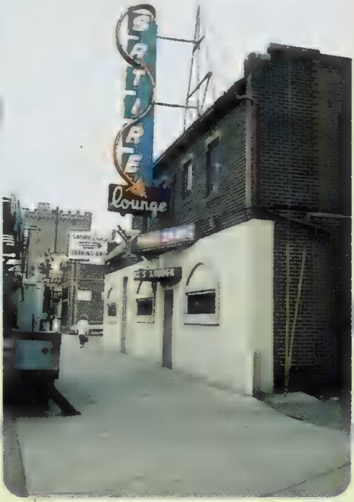
Capitol Hill and east

The central Denver neighborhoods east of the capitol were prosperous for decades—until people began moving to the suburbs in the 1960s. Large houses along Colfax can still be glimpsed behind storefronts that were added later (21). As older property began to deteriorate, low-income housing in downtown Denver was leveled for urban renewal and many people were displaced into the older neighborhoods along Colfax, which had also become home to Denver's counterculture movement. Today, the area is in transition. Less fortunate people still walk the streets, watched over by the Guardian Angels, who occupy a fortress-like Gothic Revival building (19), and served by organizations such as this relief agency that occupies a former office building (16). Still hanging on are a tattoo parlor (18) and the Satire Lounge (17), an infamous vestige of the 1970s, where the likes of Judy Collins and Bob Dylan once performed.

But real-estate values have begun to rebound as new residents and former suburbanites rediscover some of the wonderful residential property nearby. The comeback potential of mid-Colfax commercial property is bolstered both by the reverse-exodus of the middle class and the large quantity of good building stock (20) along the avenue that can be reused.

East to Aurora

When U.S. Interstate 70 opened in 1966, hundreds of cars per day were routed away from Colfax, and the strip went into a slow decline that hit Aurora especially hard. Many landmark motels vanished



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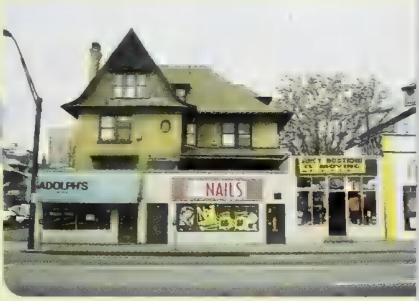

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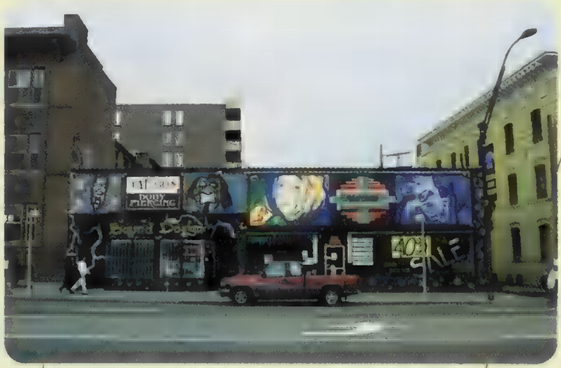

Colfax Avenue

Aurora

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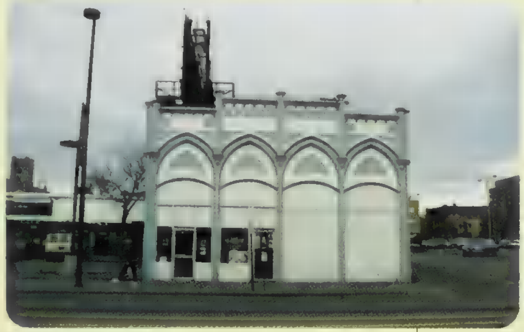

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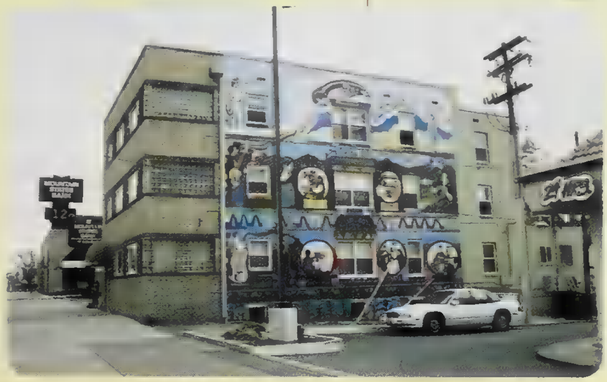

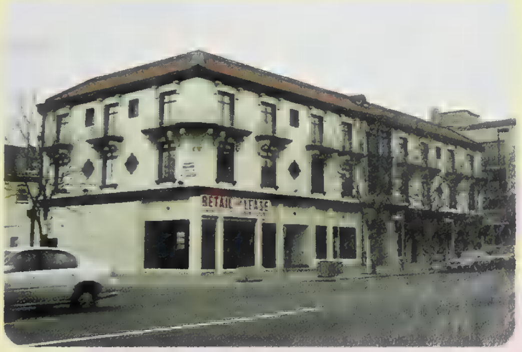

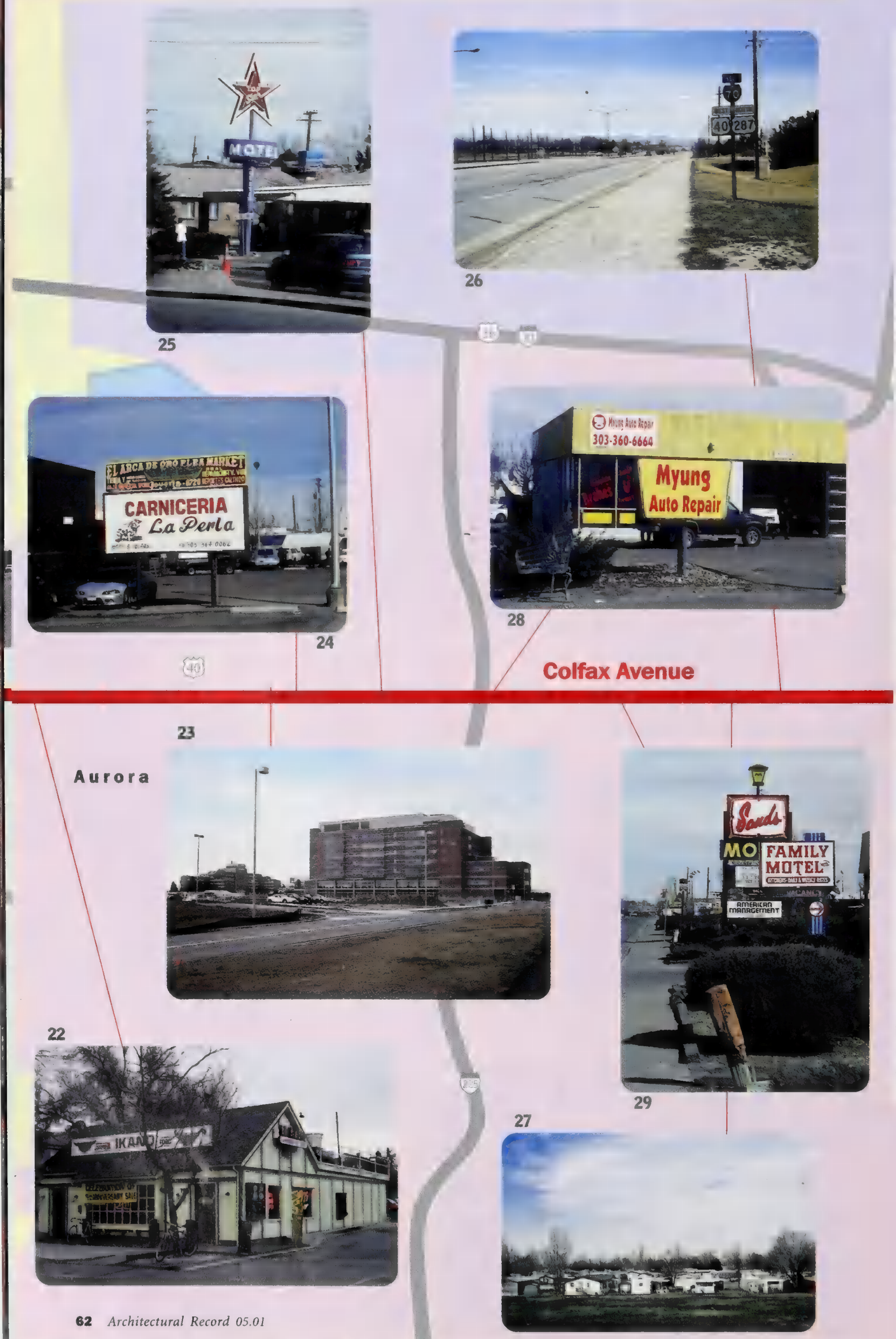

while others survived (25, 29) some can make do only by renting rooms by the week to transients. Still, Colfax has great potential, and the city of Aurora is attempting to move it in the right direction, encouraging trailer courts to relocate and discouraging fast-food joints and gas stations from opening here. Many sites along east Colfax have been adapted by enterprising minorities, particularly Koreans and Hispanics, for their own uses (22, 24, and 28). Over the next three to five years, $20 million will be invested in what was Aurora's original downtown area.

Colfax's far-eastern end will also undergo redevelopment over the next 10 years as the University of Colorado Health Sciences Center moves from downtown Denver to the decommissioned Fitzsimons Army Medical Center. One of the first new buildings on the campus, the Anschutz Cancer Pavilion (23), was completed last fall. To the east of Fitzsimons and Interstate 225, more potential for development exists as businesses along Colfax are replaced by trailer courts and tract houses (27).

There is no such thing as a street that never changes, yet there may be no other place in the U.S. where change can be observed over an almost perfectly straight line for so many miles. Perhaps the only thing that hasn't changed over the 150 years that Colfax has been in existence is this view from the prairie (26), which looks west, past Denver, to the Rockies. ■

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For and about the new generation of architects

archrecord2

FOR THE EMERGING ARCHITECT

The latest incarnation of archrecord2 in these pages and at architecturalrecord.com/archrecord2 on the Web offers up a platter of sumptuous treats, including a new addition to the Work section called "How I Made It." This new feature will let an established architect give sage advice, proffer a revealing anecdote, or just sound off. Gold Medalist Michael Graves is our chosen man in print this month, and you can go to the Web site for other prominent architects' words of wisdom. Dig in!

DESIGN

The other Santa Monica architect

Hagy Belzberg earned his master's degree from the Harvard Graduate School of Design in 1991, at one of the worst economic moments for architects in recent years. Luckily, he was able to get a job in Frank Gehry's office. And yet a mere three months later—still unlicensed, still in the thick of economic uncertainty—he set out on his own.

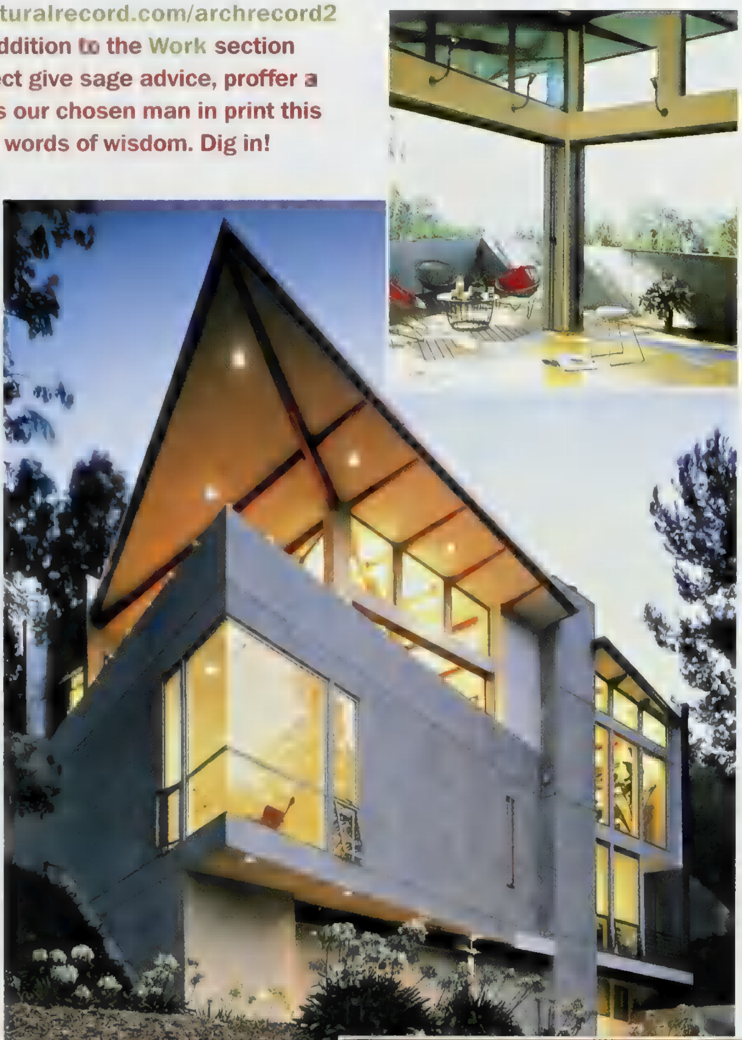
He was not, however, jumping completely into the architectural abyss. He had won a competition to design a home for two artists. The clients were delighted with Belzberg's design for an open living space beneath a second-floor studio area, and they awarded him the commission. He has been practicing on his own or with a partner ever since.

Several of Belzberg's more recent designs reflect a great deal of construction knowledge, acquired while he was working on another early house commission. A client in Malibu commissioned Belzberg and his then-partner George Whitman to design a house, but the project ended up being much more than just a design commission. The client was so impressed by the pair's abilities and enthusiasm that he asked them to serve as contractors for the house. "We sat there for two years, building this thing from the ground up," Belzberg says, "from cutting the roads to get to the house, to laying the utility lines, to cutting the pad, forming the concrete, laying the steel, framing it—really doing the whole thing."

Belzberg gained experience that he feels every architect should have and knowledge that informs his design thinking to this day. The experience, he says, "gives us a lot more confidence in pursuing concepts and ideas. We design within our capabilities, and we know where we can push and where we can take risks, instead of coming up with grandiose ideas and not being able to fulfill them."

He has put this knowledge to practical use in several of his later designs. The Los Angeles County Museum's Plaza Cafe, for instance, had a very tight budget, and Belzberg knew that he would not be able to rebuild entire structures. Instead, he devised a system of Spandex "sails," which transformed the space and cost only about $3,000 to fabricate and hang.

The constraint was not money, but time, when chef Joachim Splichal commissioned Belzberg to renovate a 1950s apartment house that contained



Dumbacher Residence, Pasadena, Calif., 1997
Belzberg Architects. While working for Frank Gehry, Belzberg won a competition to design this house for two artists. For this, the first project he designed on his own, Belzberg designed an open floor plan with studio space for the clients above the living area.

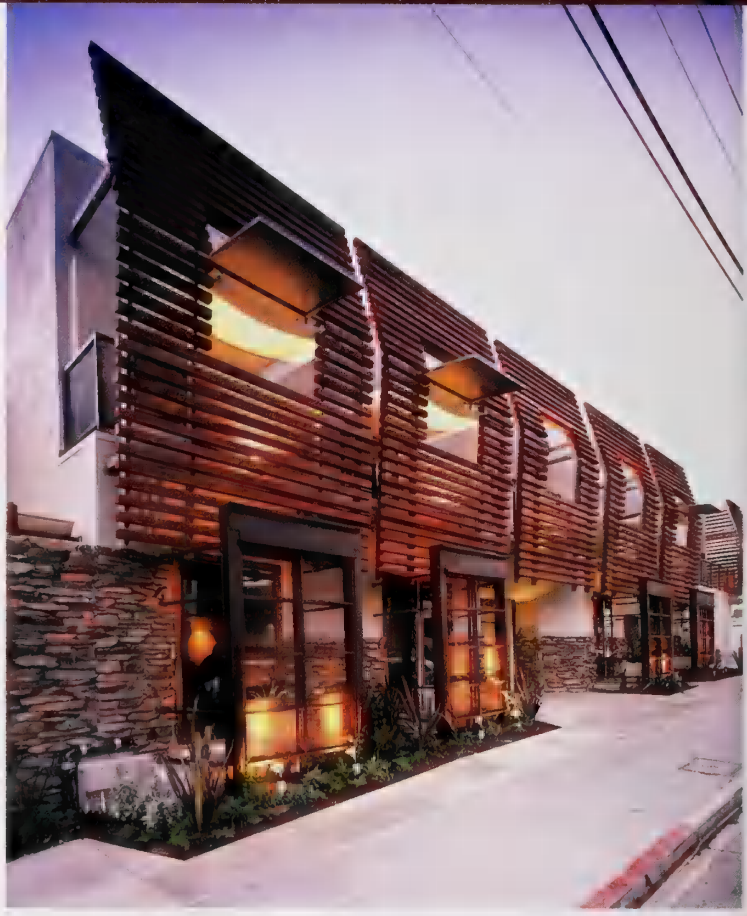
his Patina restaurant into a much more sophisticated establishment. Splichal did not want to close his restaurant for more than eight weeks, in which time the construction crew would have to build an almost entirely new building, including a new kitchen, within the skeleton of the old structure. Belzberg and his team spent a year designing and building prefabricated structures that could then be installed on the tight schedule. "Knowing how the contractor would stage all of the elements really helped us out," Belzberg says.

Like many young architects, he would like to tackle more institutional projects, but he is certainly happy with the work that has come his way so far. His office has just moved from Beverly Hills to a warehouse in Santa Monica, where he works with four junior designers and a dog, Nick. Is the dog licensed? "I can't comment on that," Belzberg says, "for insurance purposes." *Kevin Lerner*

Go to architecturalrecord.com/archrecord2 for more on Hagy Belzberg, including more projects and information on how to submit your own project.

Nick + Stef's Restaurant, New York City, 2000
Belzberg Architects. A steak house in Madison Square Garden takes traditional masculine design elements and recasts them with a minimum of ornamentation.

LA County Museum of Art Plaza Cafe, Los Angeles, 1999
Belzberg Architects. Working on a tight budget, Belzberg transformed the look of the museum's cafe by stretching Spandex "sails" across the ceiling of the space.



Patina Restaurant, Los Angeles, 2000
Belzberg Architects. Since only eight weeks were allocated for construction, Belzberg designed prefab components that could be built and then installed on-site.

WORK

How I made it: Michael Graves

Graves at his desk in 1962.

When people would ask me, in front of my parents, what I wanted to do, I usually said, "I want to be a painter; I want to be an artist." My mother, being a conservative Midwesterner, took me aside—I was probably five or six years old—and said, "Michael, if you're not as good as Picasso, you'll surely starve, so maybe you should use your ability in a profession." And I said, "What would that be?" And she said, "Engineering or architecture." After she explained what an engineer does, I said, "Well then, I'm going to be an architect." "But I haven't told you what an architect does," she said. "It doesn't matter," I said, "I'm not going to be an engineer." Anyway, she did explain it, and I thought it was just the most marvelous thing I could imagine.

Also, I think a little pat on the back was important to me. My high school entered a competition and most of it was about mechanical drawing, but one part of it was a free category. I had drawn the side of the Parthenon, and I won first place and I got a drawing set—a mechanical drawing set—and I thought to myself, Well, if I'm the best in the state doing this, then maybe this is all right. And it gave me a little confidence. I can't tell you how important that was as a kid, to be patted on the back.

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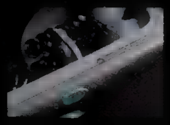
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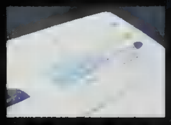
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WORK

AIA honors five young architects

(From left) P. Thomas "Gunny" Harboe, AIA, Elizabeth Chu Richter, AIA, George A. Takoudes, AIA, J. Scott Busby, AIA, and Jeffry Lee Kagermeier, AIA.

Five young architects, including a mayor, an expert on historic preservation, and an op-ed columnist, have been named winners of the American Institute of Architects' (AIA) inaugural Young Architects Awards. The awards honor individuals who have shown exceptional leadership and have made significant contributions to the profession. The young architects (defined by the AIA as those who have been practicing 10 years or less, regardless of age) who will be honored at the AIA Convention this month are P. Thomas "Gunny" Harboe, AIA, Elizabeth Chu Richter, AIA, George A. Takoudes, AIA, J. Scott Busby, AIA, and Jeffry Lee Kagermeier, AIA.

Harboe, a project manager for McClier in Chicago, was instrumental in the recent restoration of that city's Rookery Building and Reliance Building. *Chicago Tribune* architecture critic (and RECORD contributing editor) Blair Kamin selected Harboe as a 1999 Chicagoan of the Year in the field of architecture. Harboe was the 2000 president of AIA Chicago.

Richter and her husband, David Richter, FAIA, are partners in Richter Architects, Corpus Christi, Tex. She writes op-ed columns about the built environment for the *Corpus Christi Caller* and the *Dallas Morning News,* and created a statewide public radio series called "The Shape of Texas," to raise public awareness of architecture.

Takoudes was the youngest person to be named an associate at Payette Associates in Boston after passing all sections of the ARE in one attempt. He helped establish the Young Designers Professional Development Institute, a program of the Boston Society of Architects that assists young architects with practical courses and career guidance.

Busby, a project manager at Barber & McMurry in Knoxville, was president of the Young Architects Forum in 1998 and has been a leader in young architect activities in both Virginia and Tennessee. As a member of the Northern Virginia AIA Young Architects Forum in the late 1980s, Busby developed IDP and ARE preparatory seminars. He formed the AIA Tennessee Young Architects Forum in 1992 and has served on the AIA East Tennessee Board of Directors for seven years.

Kagermeier, principal of Kagermeier Skaar Asleson Architects, has been mayor of Mankato, Minn., since February 2000, after winning as an independent. He has served on the AIA Minneapolis Board of Directors, was commissioner of the Mankato Housing and Redevelopment Authority, and was a member of the Mankato Downtown Infrastructure Committee. *John E. Czarnecki, Assoc. AIA*

LIVE

A life outside your profession

The Live section of archrecord2, like all of the sections, has a cyber life completely separate from the confines of print and the magazine's publication schedule. For example, the magazine's first installment of Live (which, like all of our past features, is still available at architecturalrecord.com/archrecord2) showed the workspaces of a selection of young architects. So did the magazine. On the Web, though, the photos are interactive: Run your cursor over them and you zoom in to discover details and descriptions written by the architects themselves. And as for publication schedules, you'll find that every section of archrecord2 online is updated at least twice a month. On April 23, for instance, the furniture design of Manche Mitchell, including his modular bookshelf, appeared exclusively online. Before that, the feature "How I Made It," in which Julie Snow describes her first big break, made its debut—online only, once again. So make it a point to stop by the Web site as often as you can. You never know what surprises may be lurking out there in cyberspace on archrecord2.

Go to architecturalrecord.com/archrecord2 for constantly updated, exclusive interactive material and the archives of archrecord2.

TALK

Connect with your peers

From month to month, the Talk section of archrecord2 grows in breadth and in depth. As a rule, once a forum is opened, it doesn't close, so the breadth of topics available for discussion on the site is growing every day. And of course, so is the depth of the conversation, as more and more young architects come to the Talk section in order to connect with one another. Haven't joined the fun yet? This month is as good a time as any to start talking. Weigh in on one of the existing questions, or get the conversation started on this month's big new topic: Does the real world of architectural practice fit your vision of what you thought it would be when you were a student?

Go to architecturalrecord.com/archrecord2 to join the discussion and to see what other young architects are saying.

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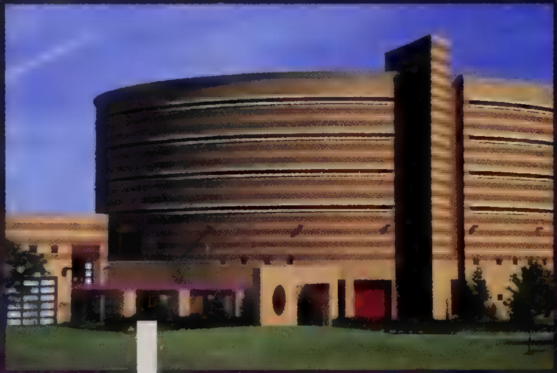


The medium and its message, or "I'm sorry, Dave, I don't have enough information"

Critique

By Anthony Vidler

The arrival of the year 2001 would seem an appropriate moment to speculate on the very real possibility of a house that, in the spirit of Stanley Kubrick's imaginary computer HAL, takes over the management of our lives, purportedly for our own good. Although its actual fabrication may be years off, it seems fitting to examine its already partially existing elements and their implications. I think there is reason to believe that the digital revolution is forging a truly new kind of architecture, one that, for better or worse, will gradually enter the mainstream of 21st-century practice.

Digital design has already demonstrated its importance to the conception and construction of major cultural monuments. As evinced by Frank Gehry's Guggenheim Museum at Bilbao, Spain, digital design allows for a new relation between conception and production that permits engineering calculations and technical and material specifications to be entered into the formal equation early in the design process. Equally important, it also permits the theoretically seamless transfer of these specifications to the machine shops and production lines. The titanium "tiles" of Bilbao were cut in this way, and recent developments in milling techniques allow for even more direct transmission of design concepts to physical realization.

Such innovations act to transform the building industry as it begins to eradicate the split between the conceptual architect and the practical builder that has haunted theory and practice since the Renaissance.

Digital design also allows for experiments with everyday materials—clothes, paper, liquids—that allow buildings to respond digitally to ecological and human needs, because their enclosures are sensitive skins that modulate temperature, light, sound, and smell, as well as transmit and display information. The recent exhibition of "The Unprivate House," at the Museum of Modern Art, New York, presented a foretaste, but the work of the MIT Media Lab has already gone far beyond such notions as the "screen as wall" to propose computerized liquids, papers, and fabrics that will transform the house into a structure that will probably control as much as be controlled.

Emerging computer style

Digital imaging is also having a profound influence on aesthetics. The early use of computerization was seen mainly as a technical aid to existing forms of representation. But the increasing sophistication of programs and their users, as well as the importation of software developed in other design fields (such as the automotive, aerospace, and movie industries), has led to an already recognizable computer style. It is characterized by smooth, digitally rendered surfaces, complex curvilinear forms, bloblike objects, shells and skins stretched over wire-frame structures. Gehry's Guggenheim at Bilbao is a spectacular example.

In the film *2001: A Space Odyssey*, astronaut Frank Poole jogs inside the spaceship, but HAL is ultimately in control of the environment.

True, the forms of Gehry's Bilbao and his later project for the Guggenheim, New York, can be traced to 1920s Expressionist utopias, and there is ample precedent for bloblike forms in Surrealism and its offshoots. But in the hands of a younger generation of architects, including Greg Lynn, Karl Chu, Ben van Berkel, and the MVRDV group, digital techniques have been pressed to limits that seem to presage an entirely new modernism, one that ignores traditional conventions of style or aesthetics altogether in favor of a continuously experimental generation, iteration, and animation of forms that respond to complicated functional inputs, both static and dynamic.

Changes in the way architecture is represented have, throughout history, provoked changes in the way architecture is conceived, designed, and built. Renaissance space is inseparable from the emergence of perspective construction in the 15th century; the straight vistas and uniform facades of ideal Renaissance streets, the theatrical planning of squares, the centralized volumes of churches and villas, all refer to a new sense of perspectival geometry, its proportions calibrated according to distance and its viewing points constructed by the position of the eye in relation to a vanishing point.

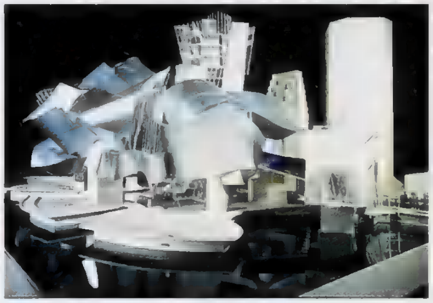
The introduction of graph paper as a design aid in the European polytechnic schools of the early 19th century helped rationalize and standardize the planning of neoclassical and gothic revival buildings. In the 20th century, the increasing use of such geometrical constructions as the axonometric effectively demonstrated the volumetric and structural unity of buildings, opening the way for modernist architects like Le Corbusier to conceive of a generalized abstraction of three-dimensional form. In architecture, the medium may not be the message, but it

Anthony Vidler teaches art history and architecture at UCLA. His books include Warped Space: Art, Architecture, and Anxiety in Modern Culture.

certainly has a profound effect on the message's form.

As many critics have pointed out, digital space—created by a computer from a list of inputs—is not the same as traditional perspectival space; or rather, the programs that create digital space do not rely in any fundamental way on perspectival vision. Unlike traditional perspective-based design, spatial animation programs recognize no human subject at the origin, no station points, no privileged vertical or horizontal dimensions.

Certainly, both computer games and virtual-reality environments simulate perspectival spaces in order to create a sense of normalcy; certainly too, the designer can claim that the results of digital design will take their place in a perspectival world, no matter how they have been generated. But, ideally, digital animation will be auto-generated from a full range of functional and sensate parameters introduced and controlled by avatars setting the design process in motion as a continuous transformation of an external envelope. The spaces produced may be habitable, but more or less in the same way as we might find a natural cave habitable though it was not constructed for us. Greg Lynn has compared this phenomenon to the "inside" of a structure such as the Statue of Liberty: its shell certainly encloses an inside that can be inhabited, but it was designed entirely with respect to its outside contours.

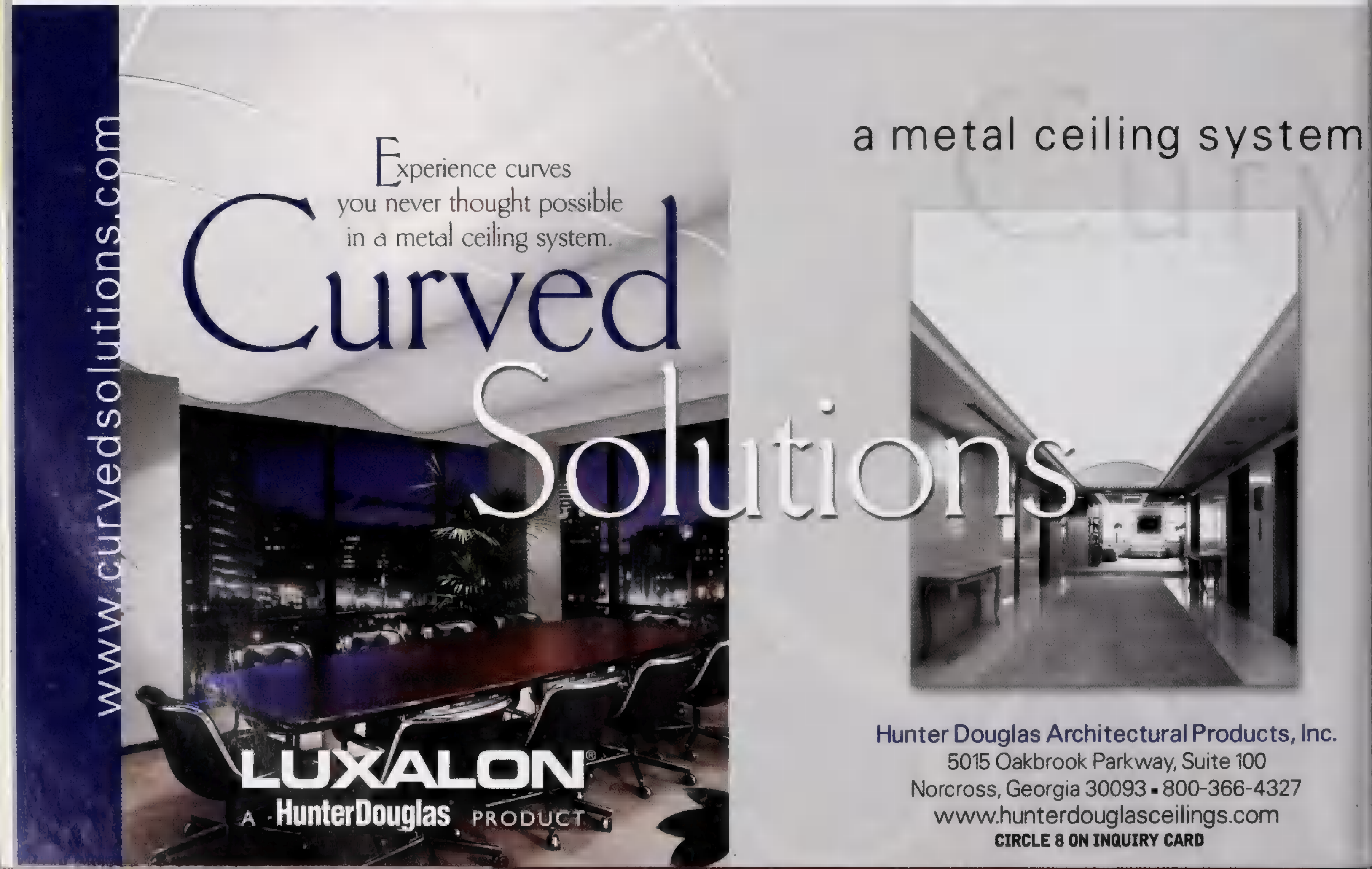


New York Guggenheim scheme by Gehry.

The larger implications of computerization depend on the way in which we develop our understanding of a digitalization process that is not just a way of treating information, but an entire world structure, one within which we have become increasingly absorbed. Digital space, installed rather than designed, is already all around us; it envelopes us in the virtual forms of media. It fights our wars, controls our consumer habits, and ensures the security of our houses.

Architectural practice will continue to explore the digital territory, pushing software and hardware to the limits. But it is equally important for practice to take a critical stance in order to encourage us to think about the consequences of giving up on perspective. Questions of screens, of the nonformal, the immaterial, the transformation of all information into digital codes all demand serious reflection in practice, along the lines of recent work by architects such as Diller+Scofidio. Their work shows us the implications and complications of our digital present, while reminding us that we might still wish to have a certain control over our own space in the future.

The last scene of Kubrick's *2001* is set in a surrealistic virtual 18th-century decor staged on the surface of a luminous grid. Within it a human subject ages to infinity, to return to its original embryonic state. This frightening vision is the apparently calm sequel to a rapid sequence of space-warping time travel as riveting as any computer-generated game sequence. These two environments, imagined in the 1960s, are today the commonplaces of digital simulation—the wire-frame space, uncannily imitating but not reproducing "normal" space, and the animated morphing of space through the rapid collapse of time. We are no nearer today than we were more than 30 years ago to confronting the disturbing presence of HAL in our lives. ■



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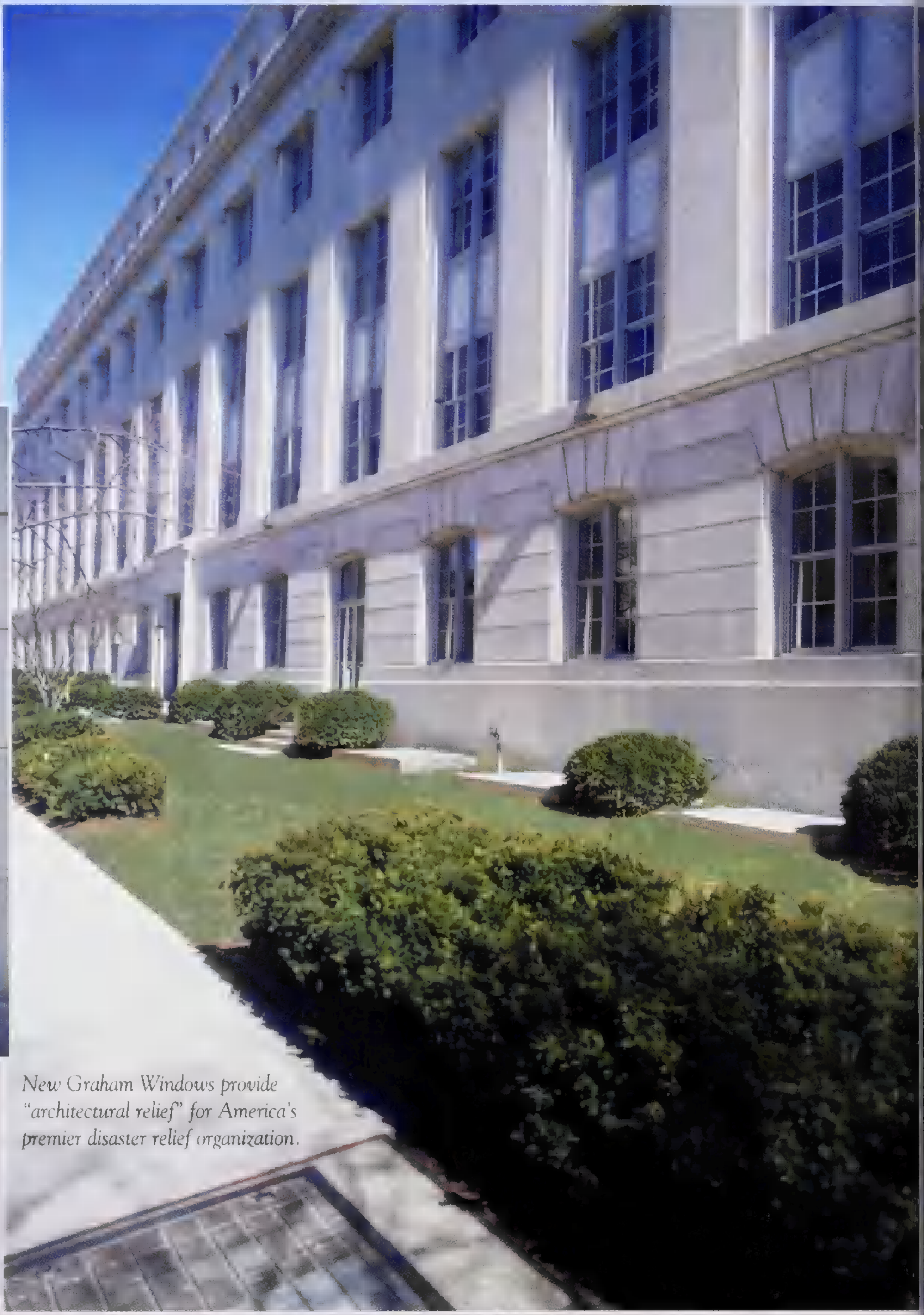

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Maya Lin (finally) speaks!
Rem and friends mix it up (again).
Rossi draws (alas, no more).

Books

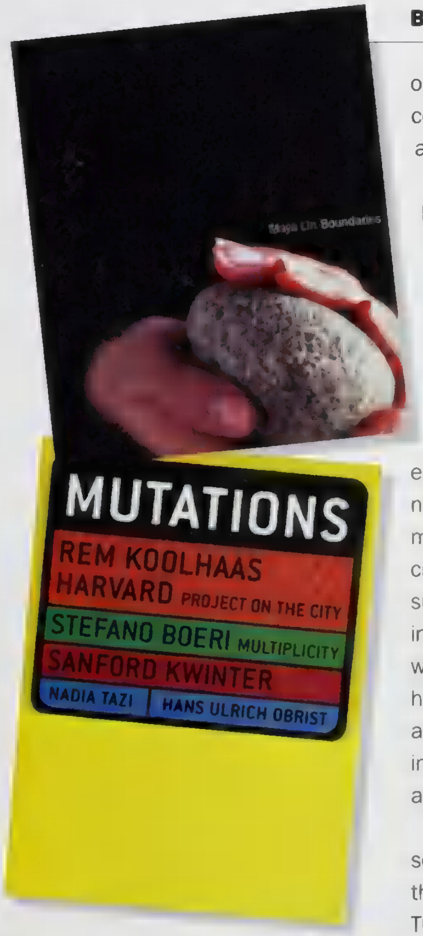
By Clifford A. Pearson

Boundaries, *by Maya Lin. New York: Simon & Schuster, 2000, 208 pages, $40.*

Time is not always kind to buildings or designers. Roofs leak, curtain walls fail, reputations ebb. Maya Lin, however, has made time her friend. Since her Vietnam Veterans Memorial was completed in 1982, she has made the passage of time a silent yet powerful element in her designs. She knows time can heal as well as destroy.

Boundaries is the first book on Lin's career, and it captures the range of her work—from memorials and institutional projects to houses and sculptures. Written in the first person, the book reveals many of the whys and hows of her designs. It's fascinating to learn, for example, that she begins each work by imagining it verbally, by writing "what the project is and what it is trying to do." Although surprising because her work is often so visually memorable, such a method makes sense for an artist who has used text as a critically important element in many of her designs.

This book, too, is a deft merging of words and images, designed by Lin herself with Michael Rock and Alice Chung of the graphics firm 2x4. Running through some of the pages is a line of text that imparts a sense of movement—graceful, not hurried. In one of these lines crossing several pages, Lin writes, "I feel I exist on the boundaries . . . somewhere between science and art . . . art and architecture . . . public and private . . . east and west . . ." The ribbon of small but clear text, of course, is a boundary itself, and Lin's work straddles it beautifully.



At the end of the book, Lin describes the "last memorial" she would like to create—one that would focus attention on the extinction of species. "A series of markers that would monitor the health of the planet," the design would incorporate seven sites (including Yellowstone, the first national park; Antarctica, the first international park; Tibet, the gateway to the sky; and an Internet link) and would be an ongoing, ever-changing endeavor. Here, the notions of a project without end and of time running out converge, explaining a great deal about Maya Lin and her work.

Mutations, *by Rem Koolhaas/Harvard Project on the City, Stefano Boeri/Multiplicity, Sanford Kwinter, Nadia Tazi, Hans Ulrich Obrist. Bordeaux: Actar, 2001, 720 pages, $45.*

This mongrel collection of essays, research projects, sloganeering, and punchy graphics is much like its subject, the modern city: messy, engaging, occasionally surprising, and sometimes annoying. There are places here you don't want to go, places where the garbage hasn't been picked up. But there are also some fascinating sections rich in information, visual stimulation, and even enlightenment.

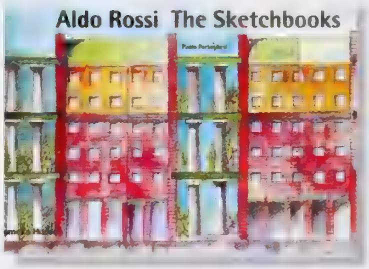
The worst part of the book is a series of unillustrated essays with the dry tone of academic lectures. The best parts tend to be by the Harvard Project on the City, the Rem Koolhaas-led studio that each year "investigates a specific region or a general condition undergoing virulent change." Droll humor and bold graphics give these sections a sense of immediacy, and solid research into urban culture keeps readers hooked. For example, the section entitled "How to Build a City: Roman Operating System" is both a witty send-up of computer manuals and a remarkably concise description of imperial Rome's contribution to city planning. Whether the studio takes aim at the rapid urbanization of China's Pearl River Delta, or the seemingly chaotic development of Lagos, Nigeria, or the nature of shopping, it boldly covers territory that architects often ignore.

Other intriguing contributions to the book include photo essays on Europe, America, China, and urban Africa by Francesco Jodice, Jordi Bernadó, Alex MacLean, and Edgar Cleijne, and a section on the American city by Sanford Kwinter and Daniela Fabricius that examines places such as Houston and Las Vegas through the filters of television, poverty, and sprawl.

Mutations is a witches' brew of spicy ingredients and predictable filler. It's less than perfect. But it brings a hip, street-smart approach to city planning, which has recently been dominated by either New Urbanists or plodding academics.

Aldo Rossi: The Sketchbooks 1990–97, *by Paolo Portoghesi. New York: Thames & Hudson, 2000, 192 pages, $28.*

Aldo Rossi's drawings did not always elicit approval. As Paolo Portoghesi recalls in his wonderful and knowing introduction to this book, one of Rossi's professors at university tried to dissuade the young man from becoming an architect by saying his drawings "looked like those of a bricklayer or provincial builder." It is true that Rossi never had an effortless or graceful hand with drawings. There was always something a tad awkward, a little stiff in his drawings. And that is part of their charm, like Humphrey Bogart's slightly drooping mouth.

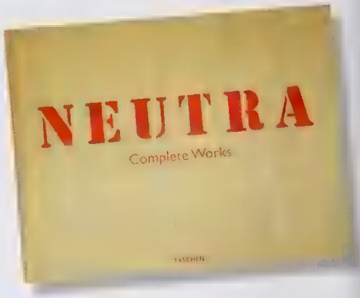


What seduces us is the passion—the rich colors, the energetic lines, the intense exploration of place and materiality. You can see Rossi's mind hard at work and busy at play in this book's 226 illustrations, organized chronologically by project. The book ends with brief essays by Giovanni da Pozzo, Massimo Scheurer, and Michele Tadini, all affectionate reminiscences of Rossi the man and the artist.

Aldo Rossi: I quaderni azzurri (The Blue Notebooks). *Los Angeles: Getty Research Institute, 2000, boxed set of 47 volumes, 2,304 pages, $600.*

For readers to whom price is no object, leafing through these pocket-size notebooks makes for a fascinating journey with Rossi as he traveled the world. It helps to know Italian, though, since handwritten notes in his native language express his thoughts on architectural theory and history, cities, museums, and landscape. These facsimile editions reproduce ticket stubs, scraps of paper, and photographs that Rossi inserted in his notebooks, as well as his pastel and watercolor sketches. This set of slender volumes truly offers a window into the mind and heart of the fast-moving, fun-loving architect who died in a car crash in 1997.

Richard Neutra: Complete Works, *by Barbara Lamprecht. Cologne: Taschen, 2000, 464 pages, $150.*



With its faux wood cover and bulging proportions (16 inches long by nearly 12 inches wide), this tome is a monograph on steroids. It weighs more than 12 pounds, so you probably won't be taking it far from the coffee table or work surface. But when you stare at one of Julius Shulman's full-bleed photographs stretching out to the ends of the page, you realize the book's dimensions help capture the grand horizontal sweep of many Neutra houses. Nearly 300 projects are covered, and most have crisply drawn floor plans to go along with photographs and text in three languages (English, German, and French). Neutra's son and partner, Dion, has written a preface that is a warm tribute, and Shulman contributes some of his own memories in addition to his glamorous photography.

The book's author, Barbara Lamprecht, who is both an architect and a historian, does a thorough job of chronicling Neutra's career and his architectural ideas. But she is mostly an uncritical observer, and her prose can be fawning and even breathless at times. Now that mid-century Modernism is back in vogue, this tome should find a receptive audience—at least among those who can afford $150 for one book.

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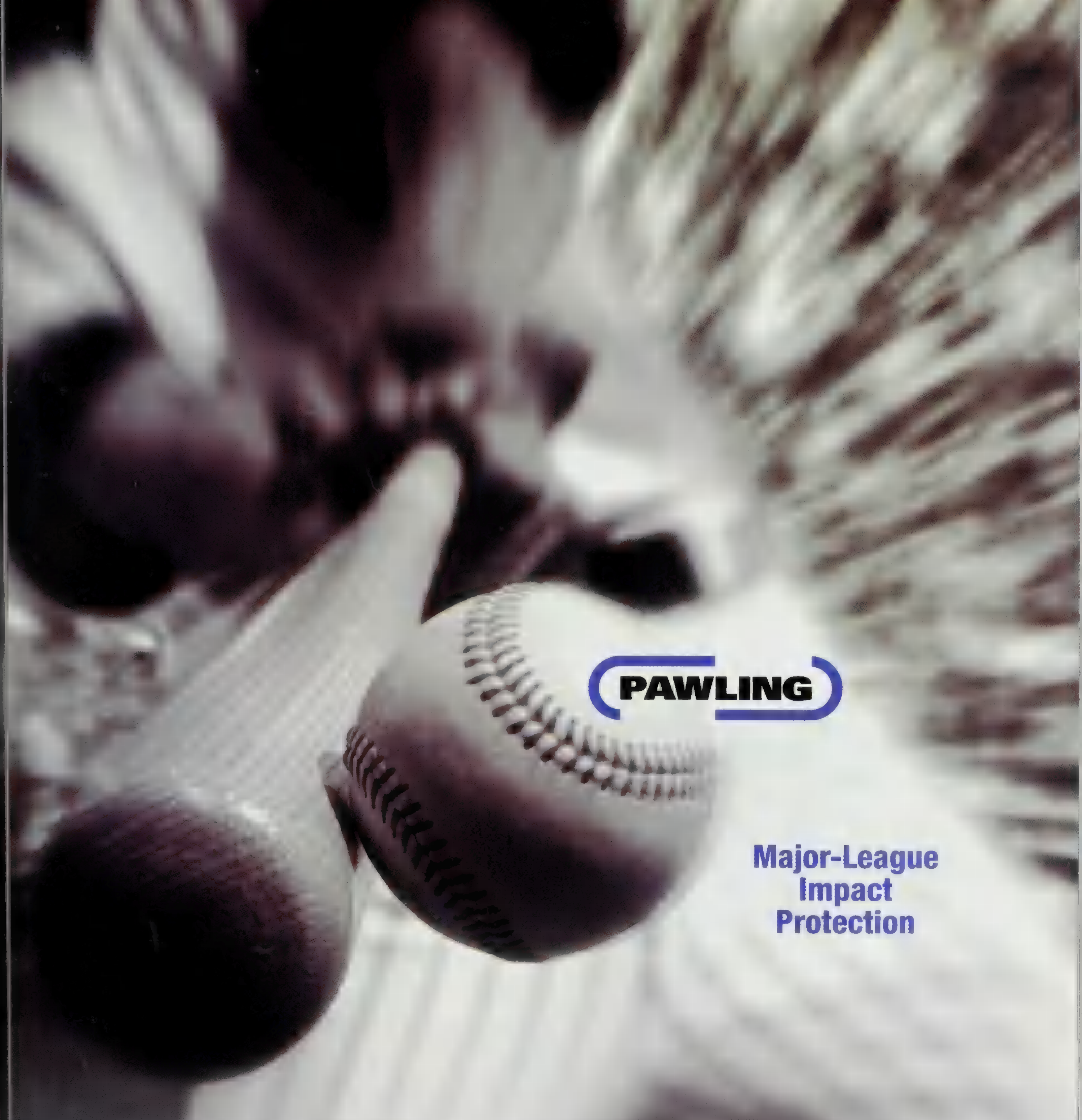

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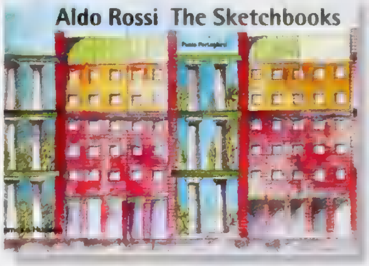

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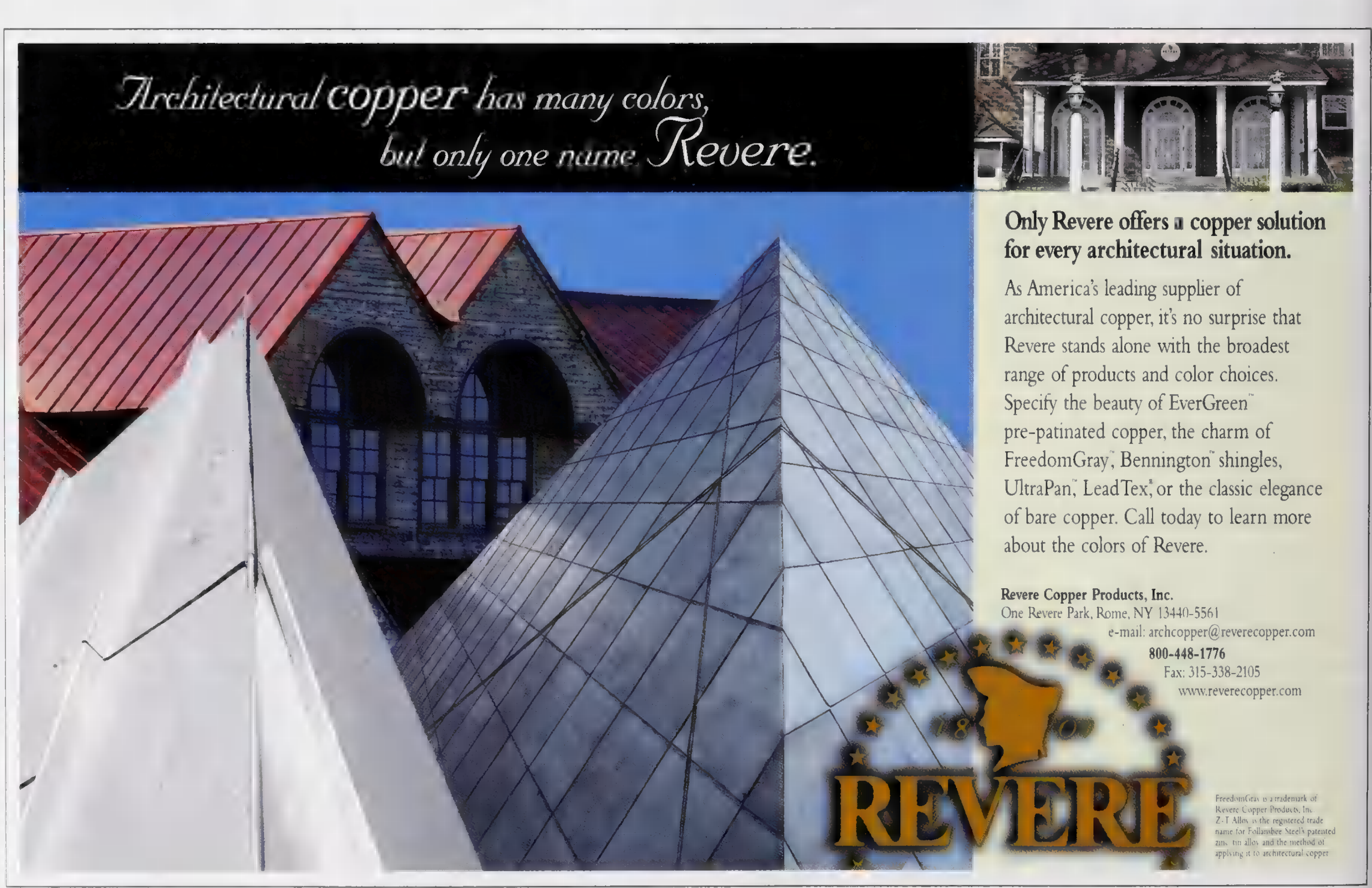
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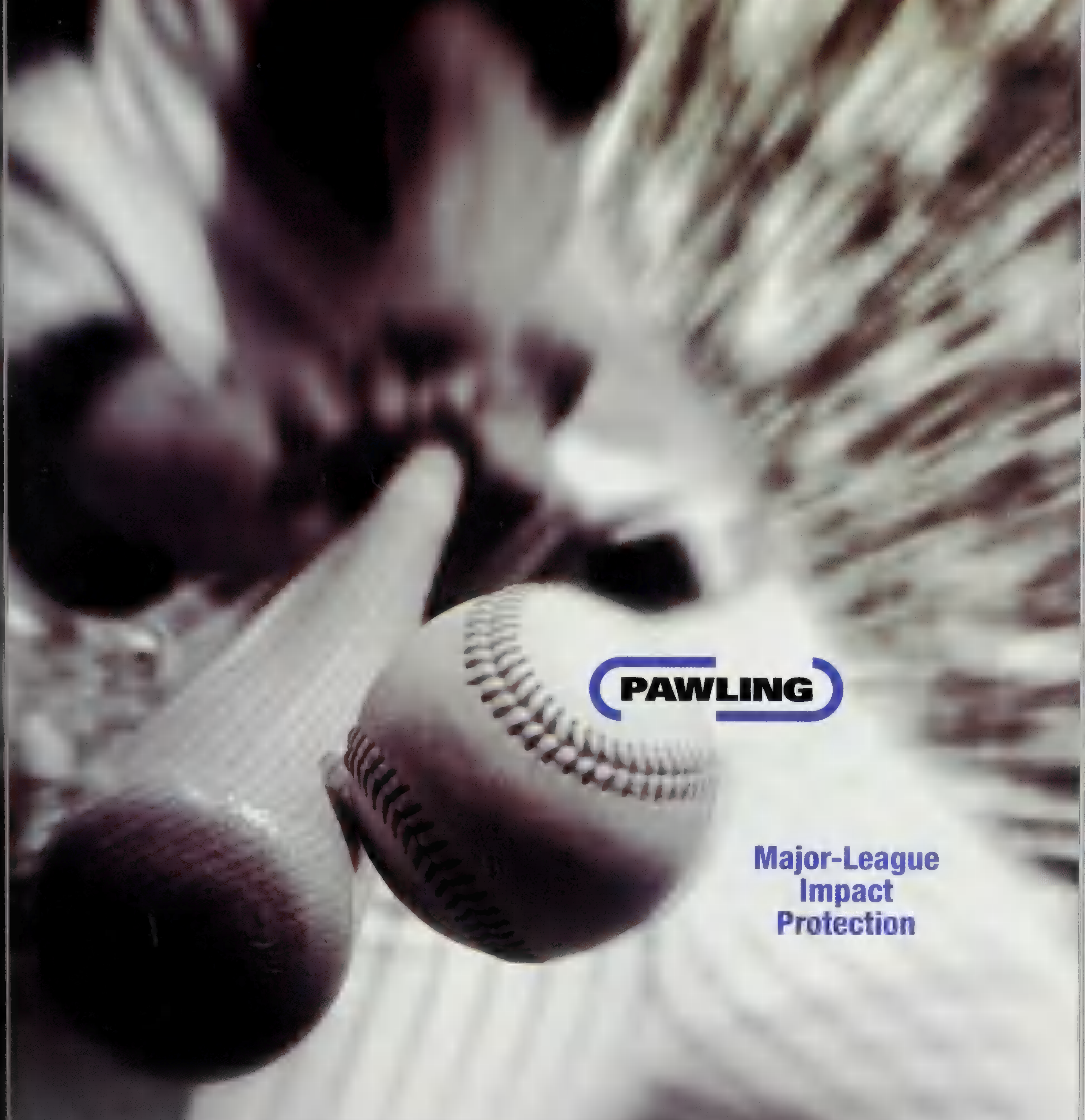

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Atlas of Change: Rearranging the Netherlands, *by Theo Baart, Tracy Metz, and Tjerk Ruimschotel. Rotterdam: NAi Publishers and Ideas on Paper, 2000, 256 pages, $17 (paper)*

The Netherlands has a unique relationship to the land. This is a country, after all, where much of the habitable and arable land has been reclaimed from the sea. Always a crossroads, Holland blends a global outlook with a close attachment to its particular piece of turf. *Atlas of Change* offers a fascinating look at the Dutch today and their complex and sometimes contradictory relationship with a shifting landscape.

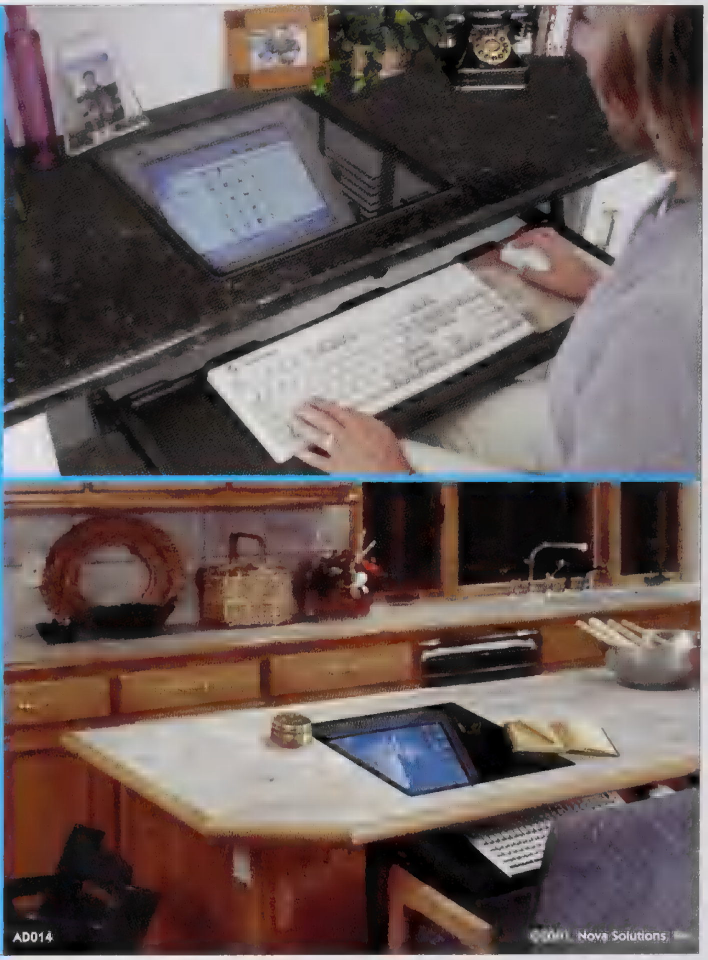
Divided into four sections, the book employs a variety of approaches to understanding urban development and modern life in the Netherlands. RECORD's Amsterdam correspondent, Tracy Metz, contributes interviews with a cross-section of Dutch residents, such as a business consultant, a barge master, an information-technology specialist, a refugee, and a historical geographer.

Photographer Theo Baart weighs in with a photo essay that works as a glossary of the changing face of Holland, including images of "boomtown," "business park," "carpool parkeerplaats," and "windmolen [windmill] park." A series of essays by urban planner Tjerk Ruimschotel examines developments in spatial planning in postwar Holland and analyzes the government's attempts to manage and direct this change. The book's final piece—created by an urban-design laboratory called Must—is a set of maps that help the reader visualize Holland's changing landscape.

Uncommon Ground; Architecture, Technology, and Topography, *by David Leatherbarrow. Cambridge: MIT Press, 2000, 297 pages, $38.*

The times are ripe for arguments favoring restraint in architecture. With the advent of "blob-itecture" and a new "Baroque," on top of the Deconstructivist styles of the 1990s, a new wave of formal excess seems to be cresting. One response to indulgent form-making is *Uncommon Ground*. David Leatherbarrow, a professor of architecture at the University of Pennsylvania, focuses on "traditional" modern architecture that developed between 1930 and 1960 and the work of three midcentury architects—Antonin Raymond, Aris Konstantinidis, and Richard Neutra. In so doing, he examines notions of architectural topography, which he argues is an interplay of buildings, landscapes, cities, and people.

Great architecture, says Leatherbarrow, is "the work of projecting the modification of sites and technical systems with respect to one another." But great architecture is also centered on the revelation of a specific place. Form must remain a secondary consideration, lest it contribute to the excess of scenography so prevalent in our time. Leatherbarrow's book reminds us that form must follow idea, and ideas are most cogent, in architecture, when tied to the poetry of a specific topography. *Reviewed by David Kesler*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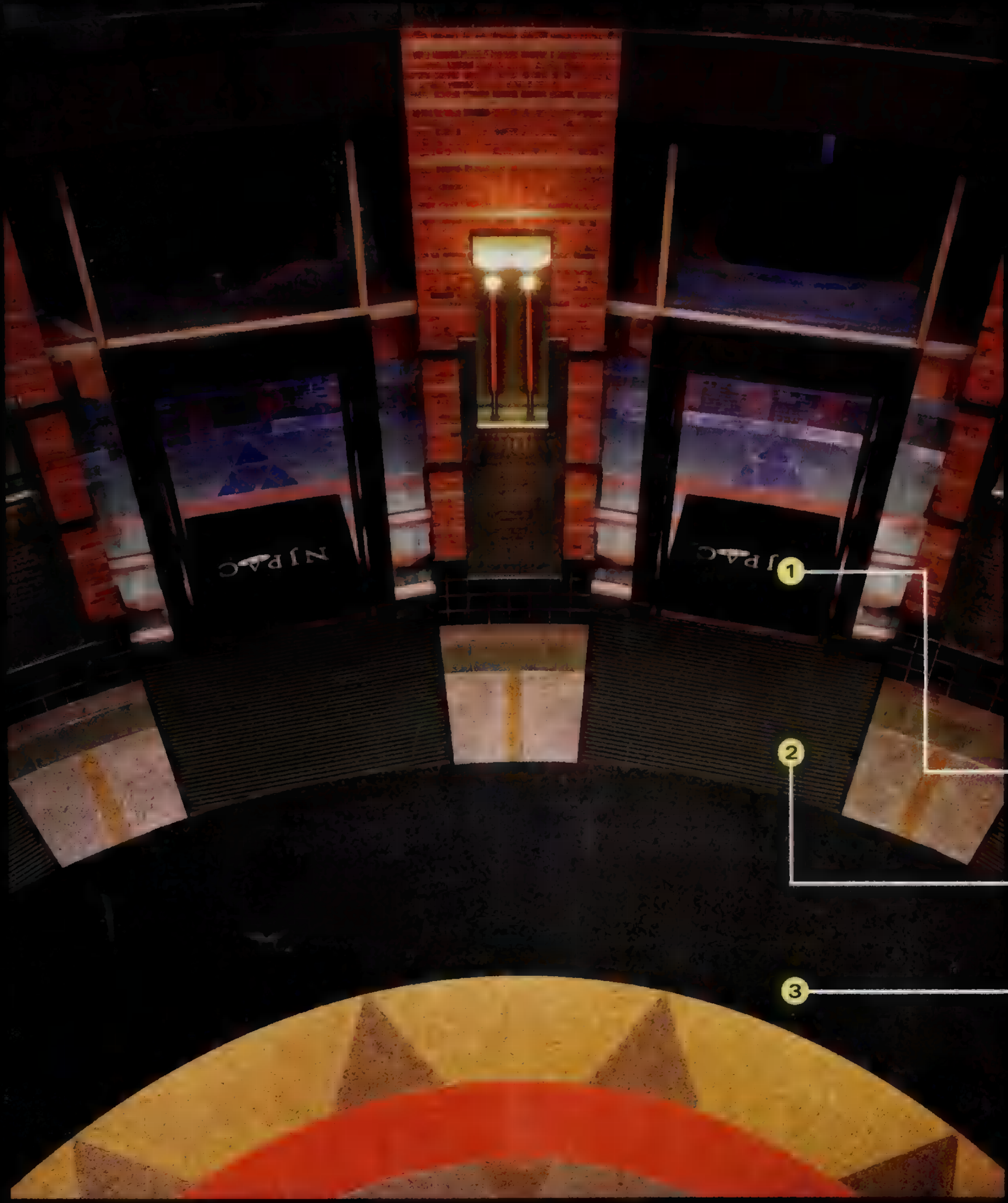

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2 x Mies: A pair of shows at MoMA and the Whitney reveals overlooked aspects of his legacy

Exhibitions

In an unusual act of curatorial cooperation, the Museum of Modern Art and the Whitney Museum of American Art (in association with Montreal's Canadian Centre for Architecture) will present simultaneous exhibitions in New York City this summer on the work of Ludwig Mies van der Rohe. No longer seen as a purely historical figure, Mies is now viewed as vital to contemporary design. Following are excerpts from the catalogs of the two exhibitions.

Mies in Berlin. *The Museum of Modern Art, June 21–September 11. Organized by Terence Riley and Barry Bergdoll.*

"A varied and creative engagement with Mies' work is in evidence everywhere. The fervently diverse and original interpretations of the Barcelona Pavilion, essayed since its re-creation in 1986, have reopened the possibility of thinking about the physical experience and the ambiguous contingencies of that icon. Until then it had been frozen in black-and-white photography and in an rigidly canonic interpretation of its significance in the history of modern architecture. A creative reengagement with Mies' studies of transparencies, in conjunction with questions about architecture in relationship to nature, technology, and human consciousness, echoes equally in the work of two generations of architects who have come to prominence since 1986. [Such reengagement] can be seen in everything from Herzog & de Meuron's Napanook winery in Napa, Calif., and Rem Koolhaas' Maison à Bordeaux, to Jesse Reiser and Nanako Umemoto's proposed design for an ambitious rethinking of the American subdivision now under study in Bridgehampton, Long Island. In short, the time seemed ripe to look anew both at Mies' work in its original context and what it has to say about our ongoing critical relationship to the legacy of classical modernism. . . .

The aim of *Mies in Berlin* is to situate Mies in a series of overlapping contexts that defined his architectural ambitions and practices from the moment of his first emigration, from the provincial city in which he was born—Aachen in the old Prussian Rhineland—to Berlin, which had emerged not only as the capital of Imperial Germany but as a Metropolis, one of the great new cities of exchange, ideas, images, and of course capital." *Barry Bergdoll /Terence Riley*

Early work

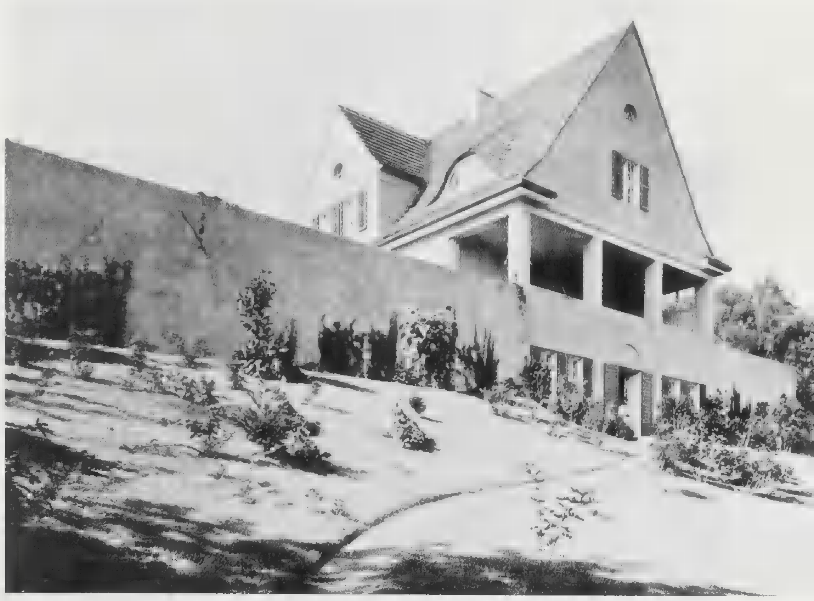
"Mies' family—his father was a master stonemason, running his own small business—belonged to [the lower middle class], which sought to distinguish itself strictly from the working classes at the bottom of the social scale, who were considered a permanent threat to the fragile stability of all late-19th-century industrial societies. Social mobility based on either economic success or academic education had been increasing throughout the 19th century, but remained largely restricted to the middle classes. . .

Mies at the Riehl House around 1915.

Information on Mies' youth is sparse and is based for the most part on what he himself chose to reveal in his later recollections. Aachen was the seat of a respected Technische Hochschule (technical institute) where architecture was taught, but a university career was out of reach for Mies, who never enjoyed a higher education. His family background gave him an early introduction to the building trade, where he received some basic training in draftsmanship and building as such, though he apparently never went through any final examinations." *Wolf Tegethoff*

The Riehl House

"The feature that, once discovered, captures and holds our attention [is] the building's startling transformation from a *bürgerlich* village house on the entrance facade into a temple poised lightly and asymmetrically over a monumental podium on the garden front. . . . Rather than setting the house on a podium to be admired from the street, Mies bound house and garden together to form a



The 1907 Riehl House outside Potsdam shows a nascent modernism.

podium that is only discovered once one is invited inside. . . .

Mies went beyond fulfilling the ideal of the house as a frame for both spiritual and physical well-being . . . to create a place, as Fritz Neumeyer suggests, for the practice of philosophy." *Barry Bergdoll*

Glass Expressionism

"Mies' designs for his Friedrichstrasse Skyscraper Project (1921) and Glass Skyscraper Project (1922) . . . appeared in Bruno Taut's Frühlicht in 1922, [which] reflected the transition between the Expressionism of the postwar years and the Neue Sachlichkeit. . . .

He was not an overt participant in the Expressionist group . . . but he experimented with Expressionist elements in his use of crystalline and biomorphic forms.

The skin of the Glass Skyscraper is expressed as continuous, uninterrupted by a structural frame or mullions. In some renderings, this glass skin is represented as if it were a freestanding curtain. Thus glass assumes a primary visual definition, through which the supporting structure is revealed only intermittently, depending on the reflective play of light. . . .

Mies incorporates the anti-rationalist features of Expressionism while suppressing them under the guise of the rational. In fact, his glass structures of the 1920s become modernism's most complete architectonic expression of the glass myth."
Rosemarie Haag Bletter

Glass abstraction

"As in the skyscraper designs of 1921 and 1922, glass in these projects [the Brick Country House and the Concrete Country House] is used as substance as much as absence, an ever thinner membrane between interior and exterior space. . . .

As Tegethoff was the first to realize, the large glass planes in the Brick Country House serve opposite but related functions. From the outside they are 'impenetrable membranes, either dazzling with reflected light or, as the light wanes in intensity, curtained by the darkness of the room behind.' . . . From within, meanwhile, they selectively frame the landscape, not creating a seamless relation to the outdoors but pictorializing key views."
Barry Bergdoll

Bismarck monument

"In 1909, a nationwide competition for a monument to Otto von Bismarck, the 'father' of German unification, had been announced. . . .

The project that Mies turned in with his brother Ewald made it through four successive rounds of a selection process that reduced the 379 original submissions to 26, but was finally cast out on the assumption that it would cost considerably more than the 1,800,000-mark limit. . . .

The sunken courtyard between the wings functions as a kind of agora, while the wings themselves are reminiscent of an antique stoa. The classical qualities of the project and its spectacular position on a height overlooking the river valley beneath strongly point to the inspiration of Schinkel.

By around 1910, and no doubt through the mediation of his teacher, Behrens, Mies had been strongly infected by the Prussian neoclassical tradition." *Wolf Tegethoff*

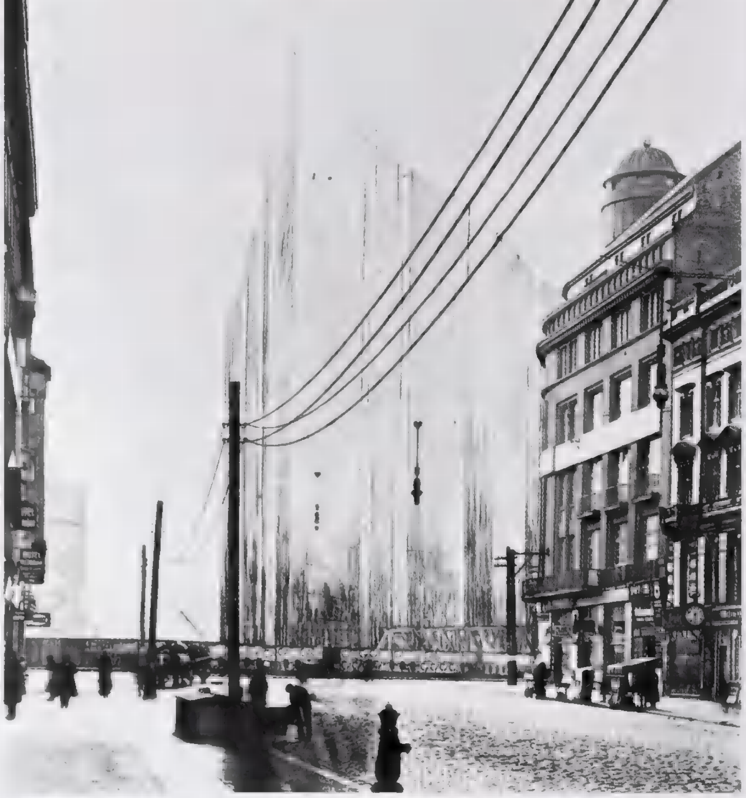
"The participants in the [Bismarck] competition included not only many of the most prominent architects of the Wilhelmine period but also some of the most significant of the next generation, including Walter Gropius, the young Mies (then aged 24), and Hans Poelzig. . . .

The proposal fulfilled the Wilhelmine taste for heavy masonry and monumental design, at the same time that its simplicity of form and restrained ornamentation anticipated modern developments. An interior perspective shows a romanticized use of color and a bold axial symmetry that attest to Mies' early debt to the Prussian neoclassicist Karl Friedrich Schinkel . . . and his unrealized Schloss Orianda project."
Adrian Sudhalter

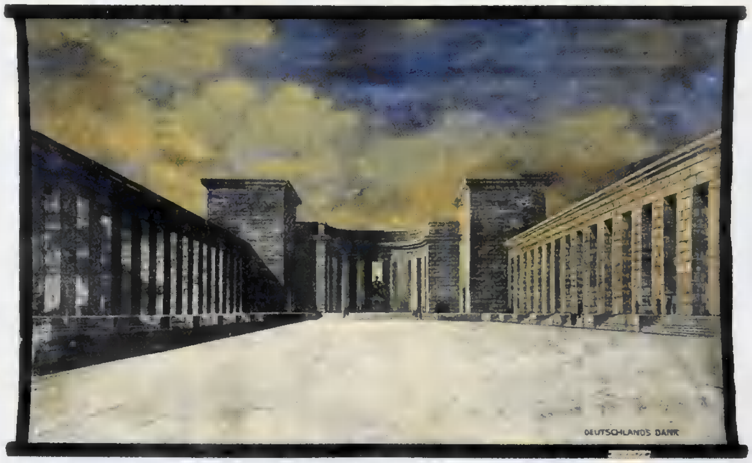
Resor House lures Mies to U.S.

"Mies first visited America in 1937, theoretically to work on a project for a house for Stanley Resor (a trustee of the Museum of Modern Art) in Jackson Hole, Wyo. On seeing the great landscape of the Teton Range, he recycled ideas laid out in sketches of 1934 for "a glass house on a hillside" and finally took the measure of the infinite horizons he had hinted at in the Brick Country House Project of 1924. . . .

The Resor project, from this point of view, would be but an acting out, the condensation of a latent vision of a house set in wide open spaces. Mies' precise attention to a natural landscape that may have evoked the reveries of the young Ludwig contrasts strongly with his apparent indifference to the American cities he visited after 1938.
Jean-Louis Cohen



Mies' 1921 project for a glass skyscraper on the Friedrichstrasse in Berlin.



Rediscovered 1910 drawing of Mies' Bismarck monument competition entry.

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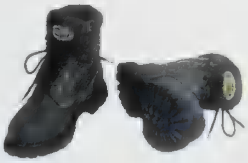

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Mies in America, *The Whitney Museum of American Art. June 21–September 23. At the Canadian Centre for Architecture (CCA), Montreal, October 17, 2001 –January 20, 2002. Organized by the CCA and the Whitney. Curated by Phyllis Lambert.*

At the Arts Club of Chicago in 1952.

"The evolving nature of his building art in America evinces the need to view the whole in order to comprehend the parts, from the time of his first visit and emigration to America in 1937–38 to his death in 1969. . . .

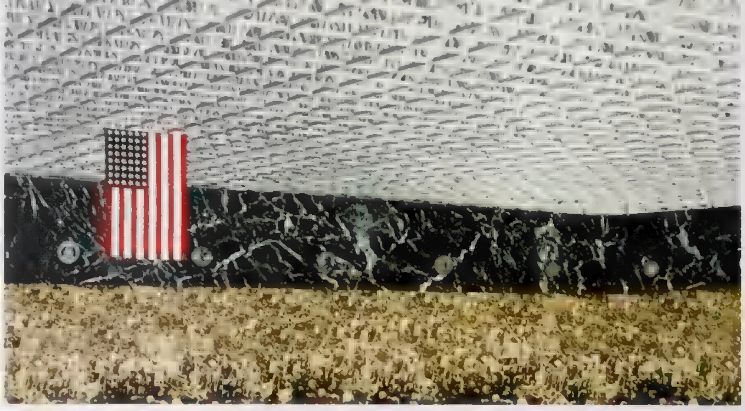
Striving to create an architecture "anybody can do," he failed to foresee that his extraordinary eye and sense of proportion could not be duplicated. . . .

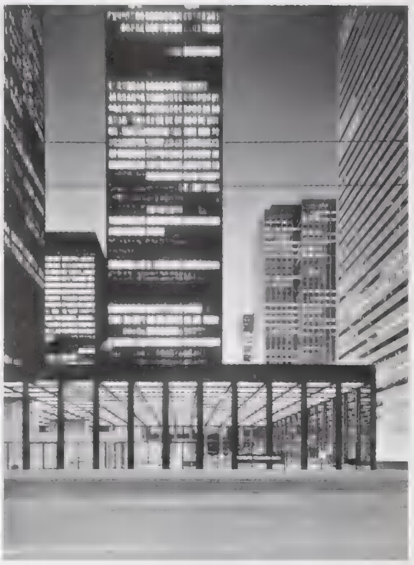
In addressing the essence of architectural problems, the pragmatism of fact, and with his sense of the slow, historical unfolding of the building art . . . Mies moved steadily toward a resolution of space and structure that was ultimately achieved in the New National Gallery in Berlin—the dark, deep, distanced space of Mies' profound last work that unites the built world and the spirit." *Phyllis Lambert*

New materials

"The conventional image of Mies in America as the architect of mullioned high-rise and clear-span steel-frame structures portrays him as a creative genius sprung fully formed into the world as the magisterial designer of new building types. However, [there is another] Mies who would find his way from the elegance of the European avant-garde of the 1920s, through the bluntness of primal industrial pragmatism, to a tough, hardened lyricism that would be uniquely American, and yet would carry within it his earliest visions of 'an architecture of his time.'

In order to understand his own epoch as the framework for the vital art of building, Mies read avidly in the sciences and philosophy from the age of 19 until his death. . . . Always cognizant that mechanization was a means and not a goal, Mies aspired to something higher for architecture. . . .





(Above) Collage of Mies' design for the Convention Hall in Chicago from 1953. (Below) The Toronto-Dominion Center in Toronto, which dates from 1963-69.

Through a process of trial and error, Mies became wary of the problems posed by new materials and often said that they ought to be tested over an extended period. While he actively explored the constructive possibilities of various materials, Mies was not concerned with purely mechanical problems, such as assembling the skin in panels (860-880 Lake Shore Drive, Toronto-Dominion Centre) versus stick-style on-site (Seagram), advances in welding, or the use of aluminum window frames. For Mies, the importance of tinted glass was not so much its capacity to limit the sun's penetration of a building as its ability to visually unify the building exterior, rendering it a monolithic aesthetic entity. . . .

Mies' desire to build an exposed-steel structure was clear [as early as 1941]. With his quiet resolve, Mies continued his pursuit of steel until he had grasped the 'right way to use it.' The towers at 860-880 Lake Shore Drive realized the goal, but this use of steel as both structure and enclosure would not again be as economically feasible for an apartment tower as it was in 1948. Already in the second high-rise apartment tower project for [developer Herb] Greenwald at 900 Esplanade, developing aluminum technology was used as the skin for the more economical concrete structure." *Phyllis Lambert*

Visualizing space

"Though Mies had explored the use of photomontage for urban projects, only in America did he employ collage as a means of studying interior space.

While Mies' collages for the Resor House are of a similar kind [to those of other projects], the architectural elements are more abstract, the viewer's attention being directed to aspects of the landscape collaged into the framing window wall." *Phyllis Lambert*

"For Mies, eager to understand his new homeland and position himself within it, there was surely no greater authority on America, its society, its land, and its architectural ambition than Frank Lloyd Wright. . .

Mies and [some of] the Berlin avant-garde . . . [pursued] a structural-spatial language understood as a cultural project uniting America and Europe, Wright and himself.

Giving shape and torque to urban spaces through the strategic placement of autonomous building blocks and the careful micro-orchestration of plazas, plinths, low walls, stairs, and landscape elements, Mies installed a new architectonic in the evolving metropolis, one that for him clarified and promoted its latent order." *Detlef Mertins*

Resor House in Wyoming was started by Mies in 1937, when he was still based in Germany.

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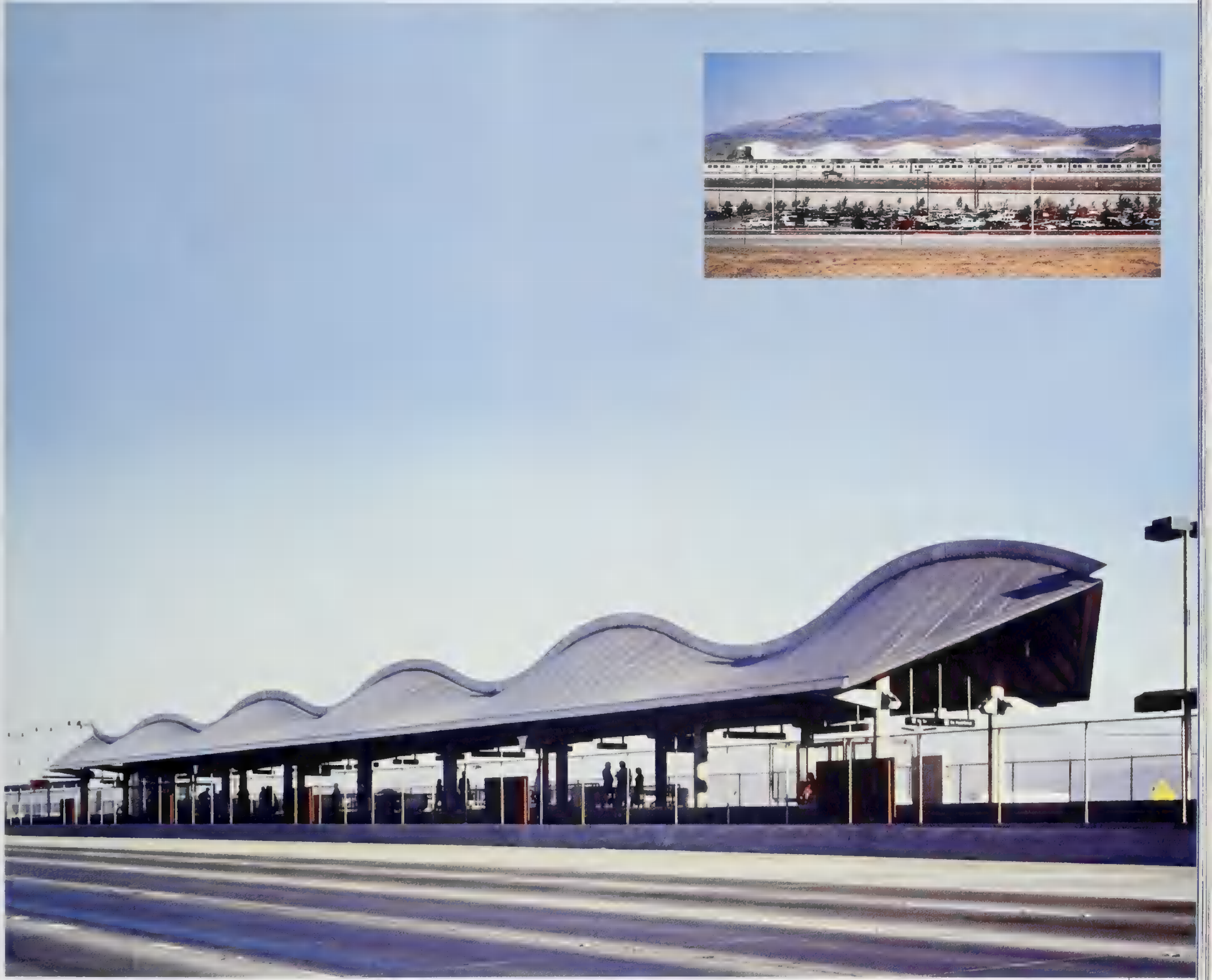


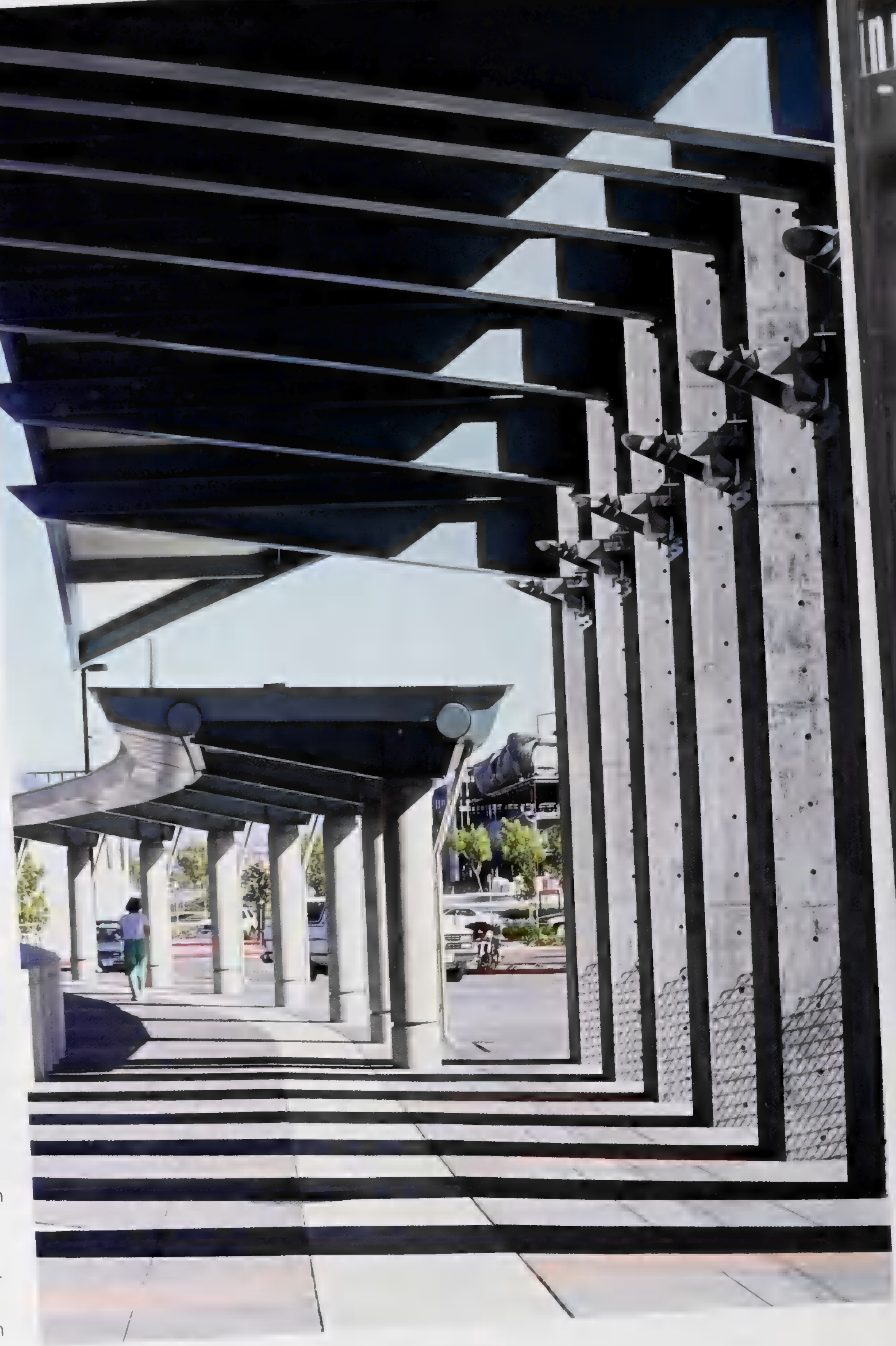
By Ingrid Whitehead

A train station makes waves in the East Bay

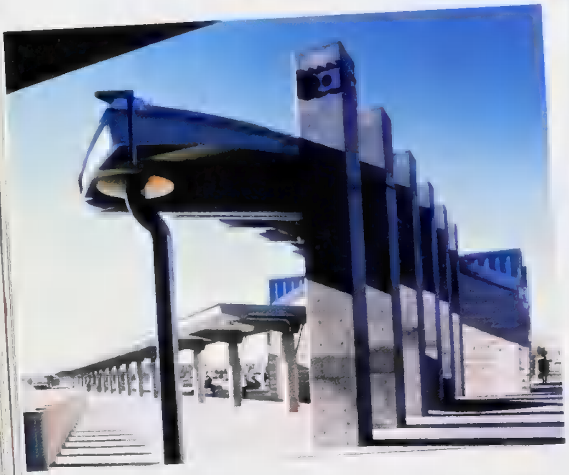
Along the California coast, the rolling brown hills are alive with orange poppies and purple ice plants, majestic views of the Pacific—and the sound of traffic, bumper-to-bumper misery. It's worst in the Los Angeles area, where the car is king. Further north, however, commuters in the San Francisco Bay Area have an alternative to inching along for hours in their sweltering metal-and-glass coffins on wheels: Bay Area Rapid Transit (BART) whisks riders from city to suburb in comfort and style. And with the East Dublin/Pleasanton station, the newest addition to the 30-year-old underground system linking the City to the East Bay, even more commuters can leap aboard.

BART had decided to extend two lines, one north from Walnut Creek to Pittsburg/Bay Point, and the other east from the Bayfair station on the Fremont line to East Dublin/Pleasanton. Recognizing the need for attractive and practical facilities, BART invited local architects to compete for the designs of the four new sta-

Snapshot



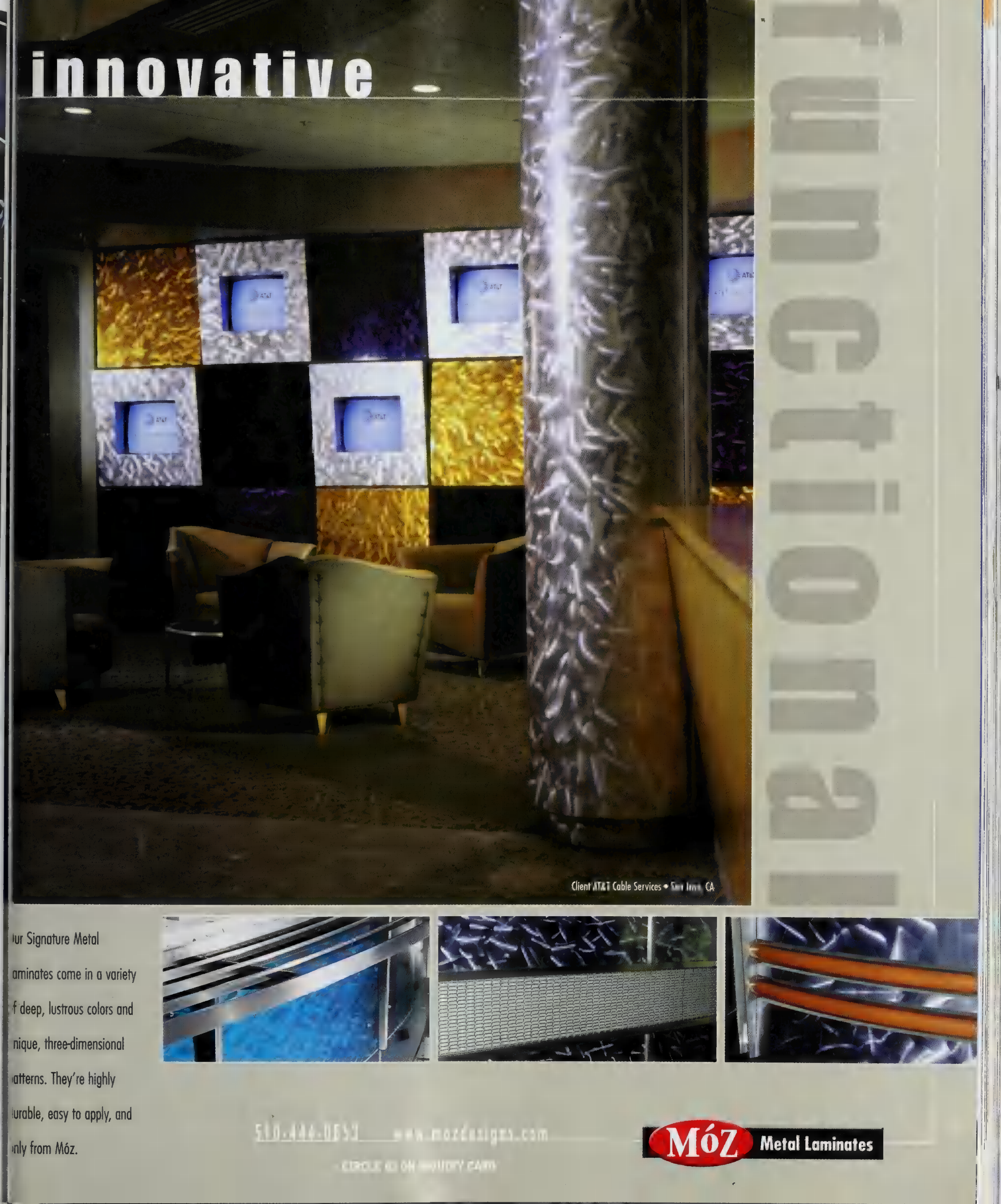
The end-of-the-line station, located within the median of a major highway between 14 lanes of busy commuter traffic, comprises two levels: a 700-foot-long platform, slightly higher than the elevated highway, and the concourse 20 feet below. Pedestrian/vehicular entry is at grade on both sides of the highway (right and below). Steel canopies shelter patrons arriving by bus and streetcar.



tions. San Francisco firm SmithGroup interviewed and secured the commission for the East Dublin/Pleasanton station.

According to Roger Hay, project designer for the station, SmithGroup intended to create a landmark for the region and thus paid special attention to the station's visual impact. The undulating sine-wave form of the canopy became symbolic of travel, movement, direction, time, and energy, and it reflects the rolling hills in view. Because the station is underground and both between and under a highway, the challenge was to feature strong forms while using materials durable enough to withstand the aggressive environment. "The palette is very simple," says Hay, "concrete (poured in place, precast, and block), stainless steel for all the exposed metal, and glass. These materials are extremely rugged and require very little maintenance. We had to design a facility with a 50-year operational life span."

Built to provide East Bay commuters with an enduring, iconic gateway to the Bay Area, the station has taken on a personality of its own. Hay reveals that because of its shape, local residents have likened it to Scotland's Loch Ness Monster, affectionately referring to it as "Nessie." ■



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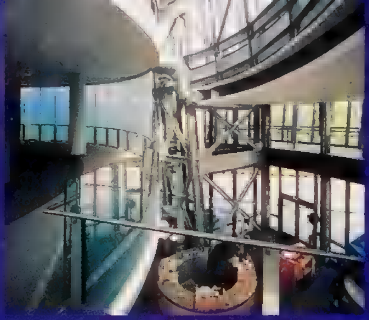

The Space Needle was a symbol of high tech – in 1962. Today, this classic landmark gets a 21st century makeover with an all-new Pavilion featuring some seriously high-tech glass: Solarban® 60 Solar Control Low-E Glass from PPG. Resembling a transparent nautilus encircling the base of the Space Needle, the Pavilion is a two-story glass structure that replaces the former retail, ticketing and lobby facilities. Transparency was key. So the architect chose PPG Solarban 60 glass because it is specifically engineered to control solar heat gain and minimize cooling costs, yet does it with a clear, uncoated look. Solarban 60 glass doesn't make outstanding design suffer for efficiency. In fact, a standard one-inch insulating glass unit of Solarban 60/clear glass blocks approximately 60% of the

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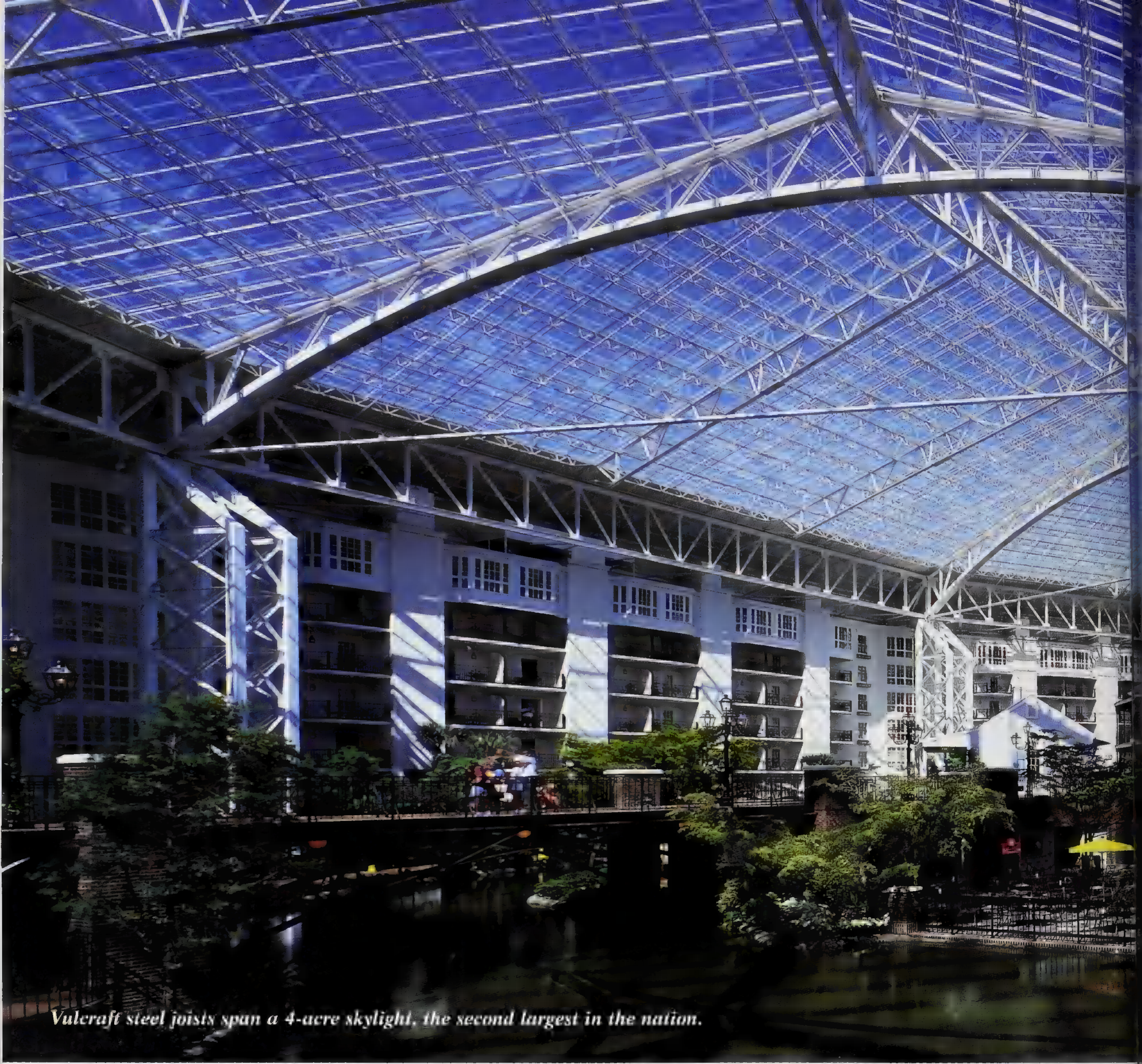

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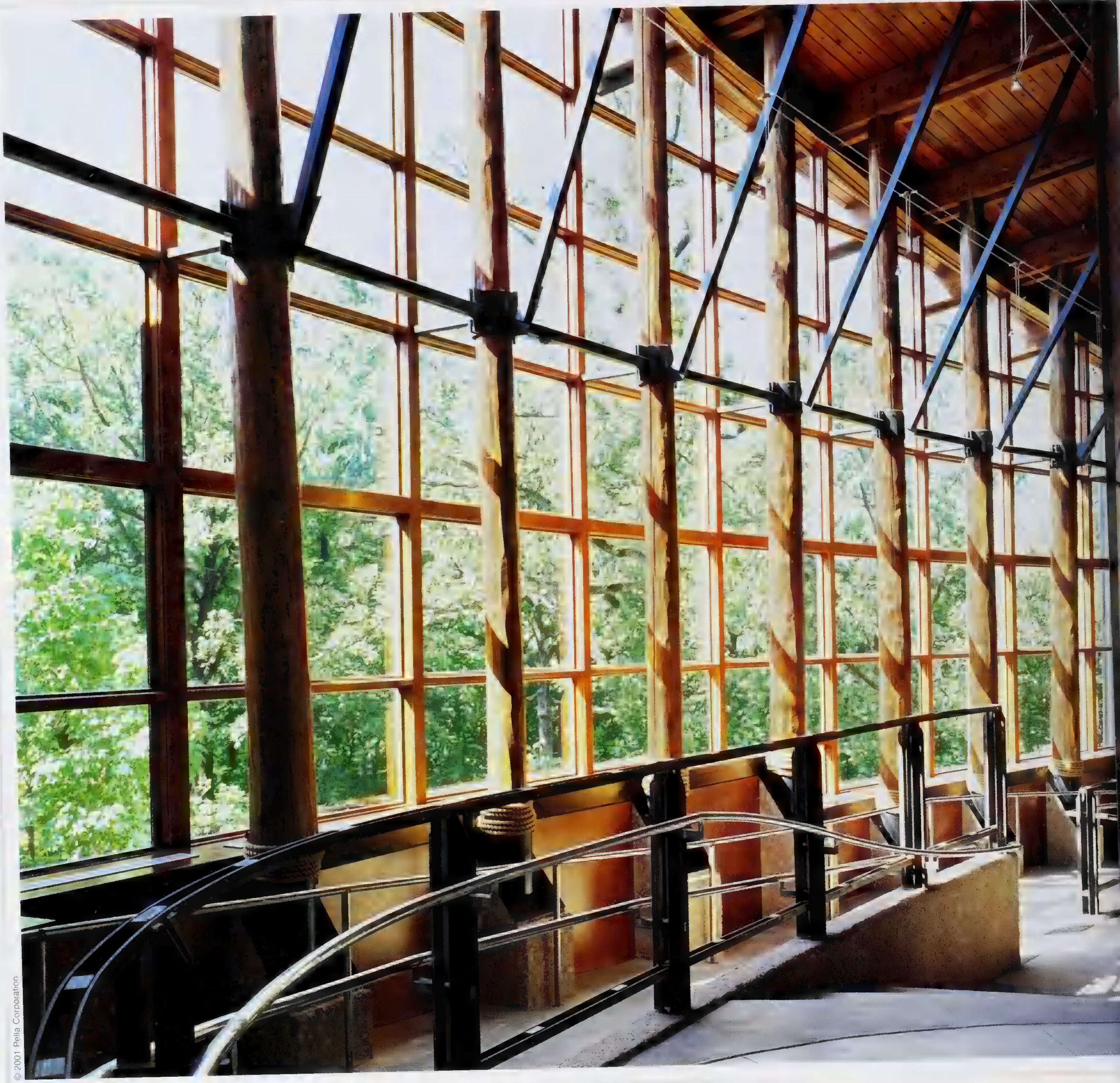

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American Institute of Architects 2001 Honor Awards

Architecture p. 98

Interiors p. 122

Urban Design p. 142

25-Year Award p. 146

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Gold Medal p. 164

The scope of the American Institute of Architects 2001 Honor Awards program coheres at a single event. Held annually at the National Building Museum, Accent on Architecture *brings together the recipients in a space as grand as America and says, "Look and see what architecture can do." Subsequently,* ARCHITECTURAL RECORD *disseminates the results, not for the exercise, but as a survey of the state of American architecture. In a single issue, you can rapidly assess who has been building what, where—as well as gain some feeling for the quality and kind of work being done by American architects.*

What did this year's crop of honors for individuals tell us? The choice of Herbert Lewis Kruse Blunck as Firm of the Year proved that accomplished work can occur smack-dab in the middle of the continent. As images from that firm's work flashed across the screen at Accent, *the audience nodded their heads in collective assent and a sort of wonder. "Where did this work come from?" they seemed to ask. Des Moines was the answer.*

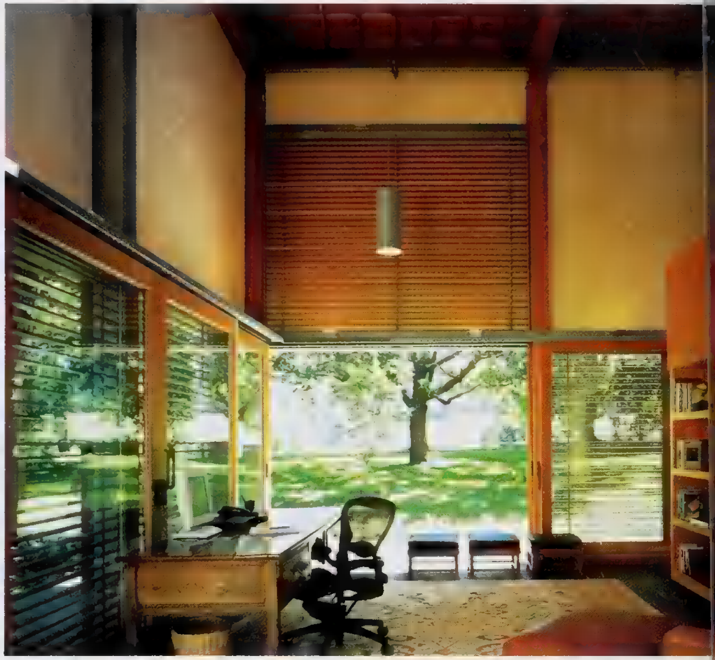
For Michael Graves, an architect, teacher, and industrial designer, selection as the Gold Medallist brought peer recognition to a man who has elevated the visibility of architecture and architects around the world. (He may be one of the two or three best known of us internationally). His wildly successful foray into product design has proved that design intelligence can breed value for the larger culture.

The terraced Weyerhaeuser headquarters in Tacoma, which garnered the 25-Year Award, seems perpetually attractive. Set beside a lake, it could be a textbook on thoughtful office design.

Winning architectural projects tell their own stories. Unlike the 1980s, when flush times encouraged excessive building as seen in the marble- and brass-clad behemoths that clutter downtown Boston or Houston, the projects funded by the capital-intensive late '90s seem restrained and almost puritanically spare, as if chastened by earlier excesses and wary of show. Their elements seem to be more ephemeral, made from light and air. A number exhibit community or social concerns. Draw your own lessons from the book of American architecture that follows. Robert Ivy, FAIA

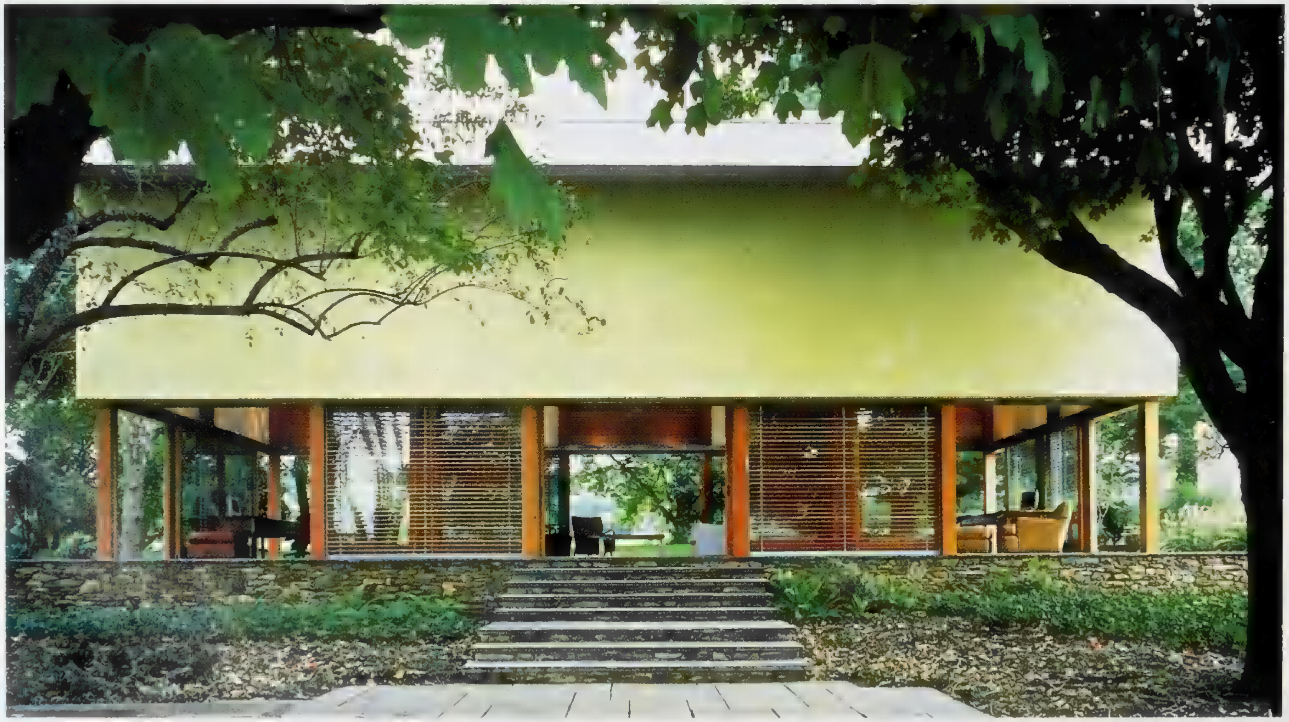
ARCHITECTURE

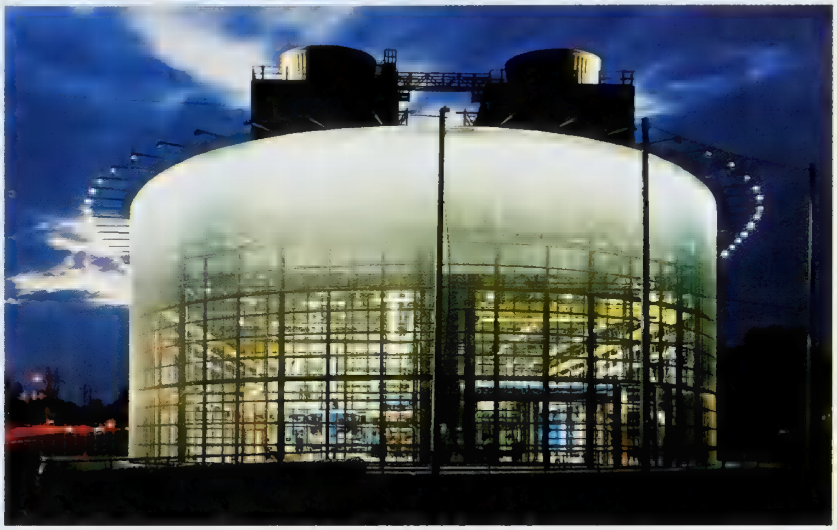
“EXTREMELY ELEGANT AND THOROUGHLY DETAILED, YET ONE IS LEFT WITH THINGS TO THINK ABOUT. PERHAPS THE BUILDING’S SIMPLICITY DISGUISES ITS THOUGHTFULNESS.”



Conference Barn
Middleburg, Virginia
Architect: *Sant Architects, Inc.*

The building’s inspiration came from the vernacular farm buildings that are its neighbors. Great restraint has been exercised in the development of the overall design concept; the detailing of the glazed, shuttered walls, the interior lighting, and the plinth, upon which the building meets the ground, reflect its simplicity.





University of Pennsylvania
Modular VII Chiller Plant
Philadelphia
Architect: *Leers Weinzapfel Associates*

The stunning oval steel-mesh wall of the plant is located next to an active expressway, from which it derives its aerodynamic curves. Its carefully detailed, industrial design is a beautiful, honest expression of technology and shines with a milky luminosity at night.

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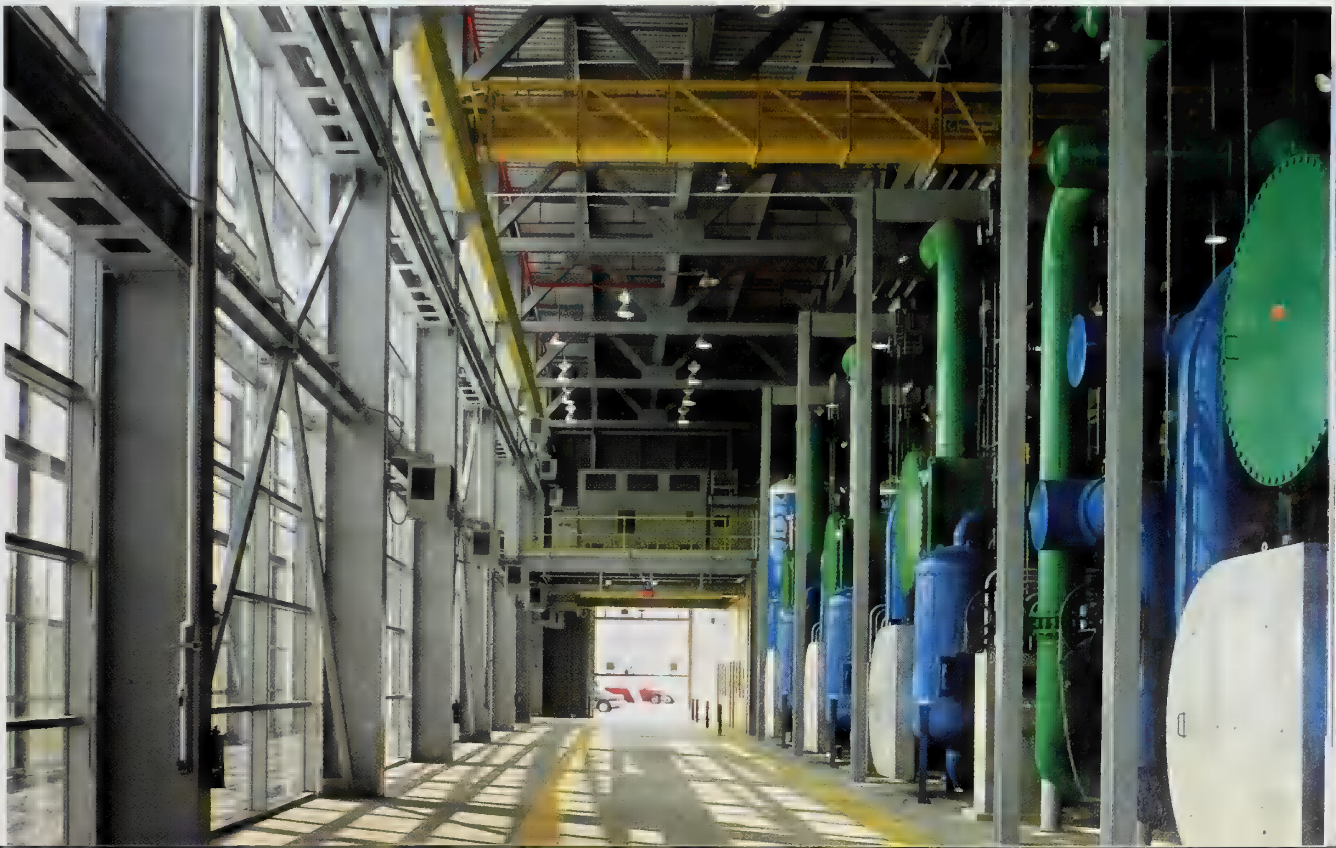

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McCormick Place South Building
Chicago
Architect: *Thompson, Ventulett, Stainback & Associates, with associate architect/architect of record A. Epstein and Sons International*

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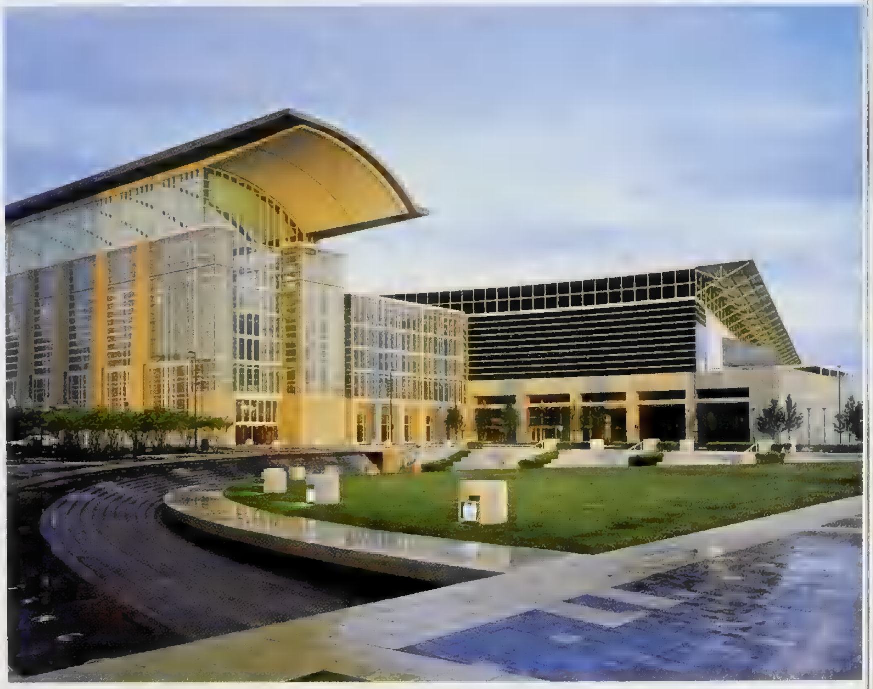

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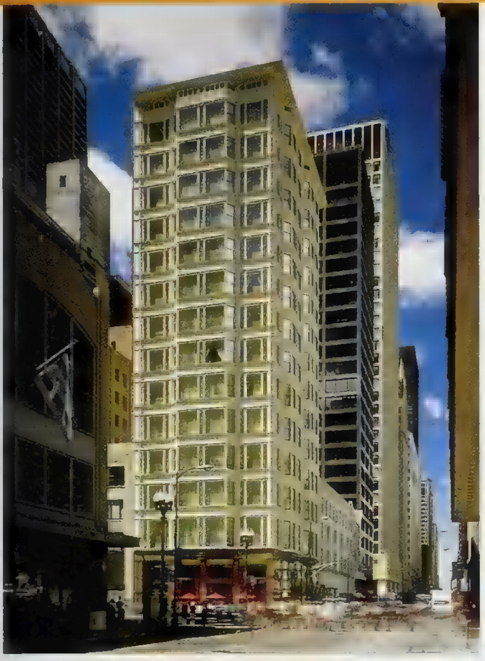
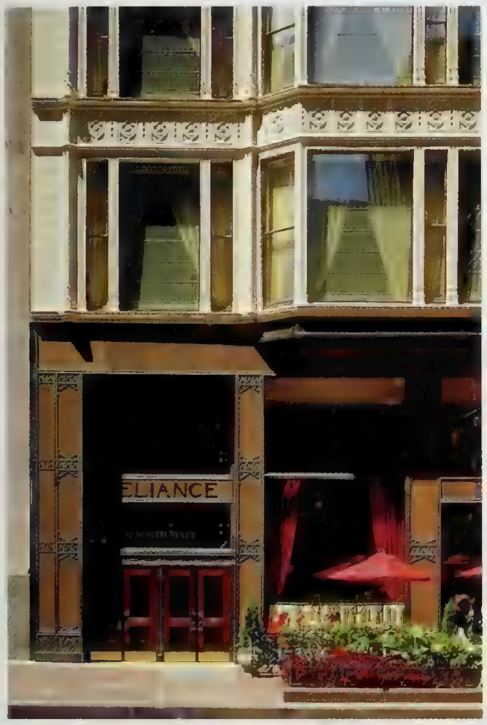
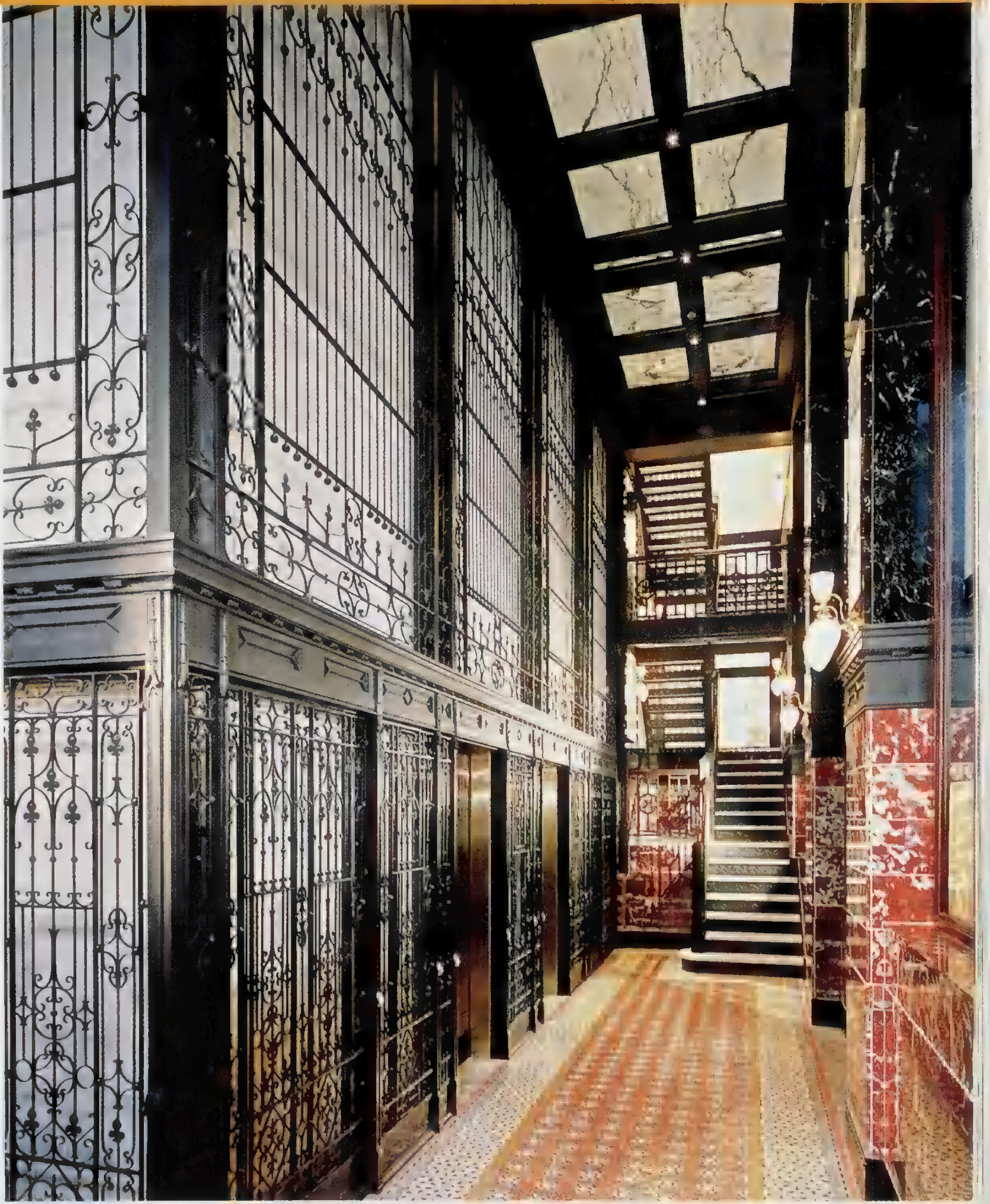
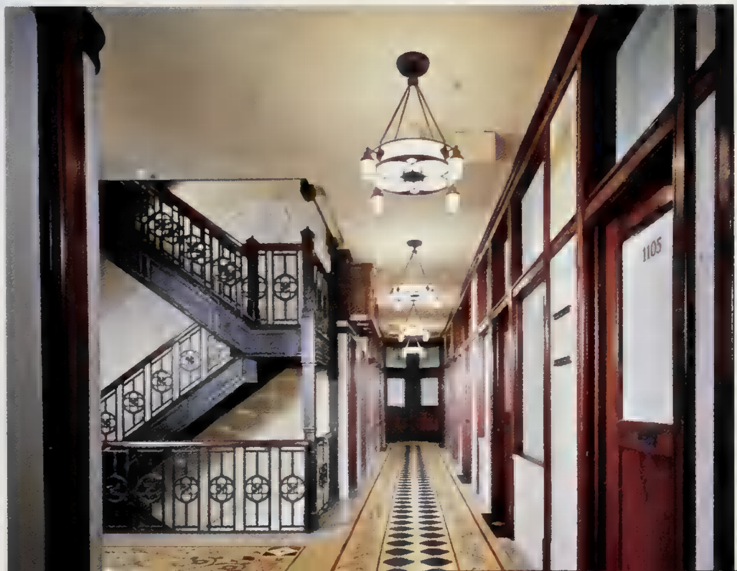






> "THE REFRESHING NEWNESS OF THE RENOVATION GAVE LIFE BACK TO THE BUILDING."

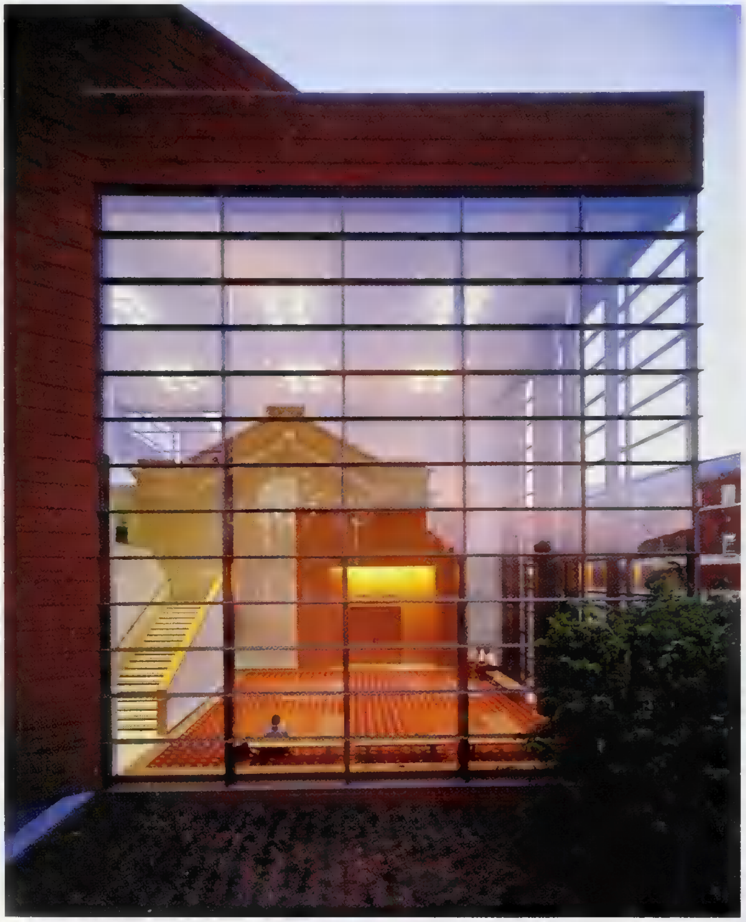


Reliance Building/Hotel Burnham
Chicago
Architect: *Antunovich Associates, with associate architect McClier*

In Phase I the city restored the terra-cotta facades of this Daniel Burnham building. Subsequently, in Phase II, a private development group sensitively rehabilitated the building for use as a boutique hotel. Returning this marvelous building to its original glory has been a model example of partnership, good design, and preservation.

PHOTOGRAPHY: © MICHAEL HOULIHAN/HEDRICH BLESSING

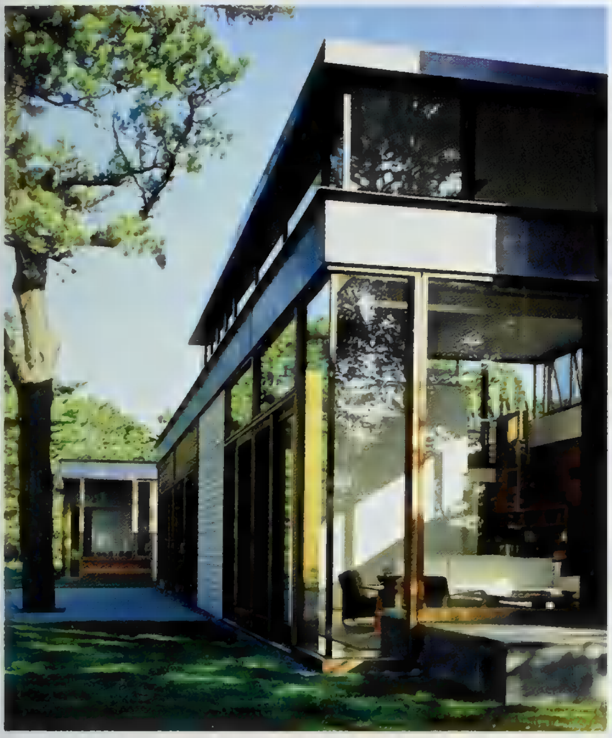
"A COMPLEX PROGRAM HOUSED IN NEW AND OLD STRUCTURES IS GIVEN URBAN FORM THROUGH A SIMPLE YET STRONG DESIGN."

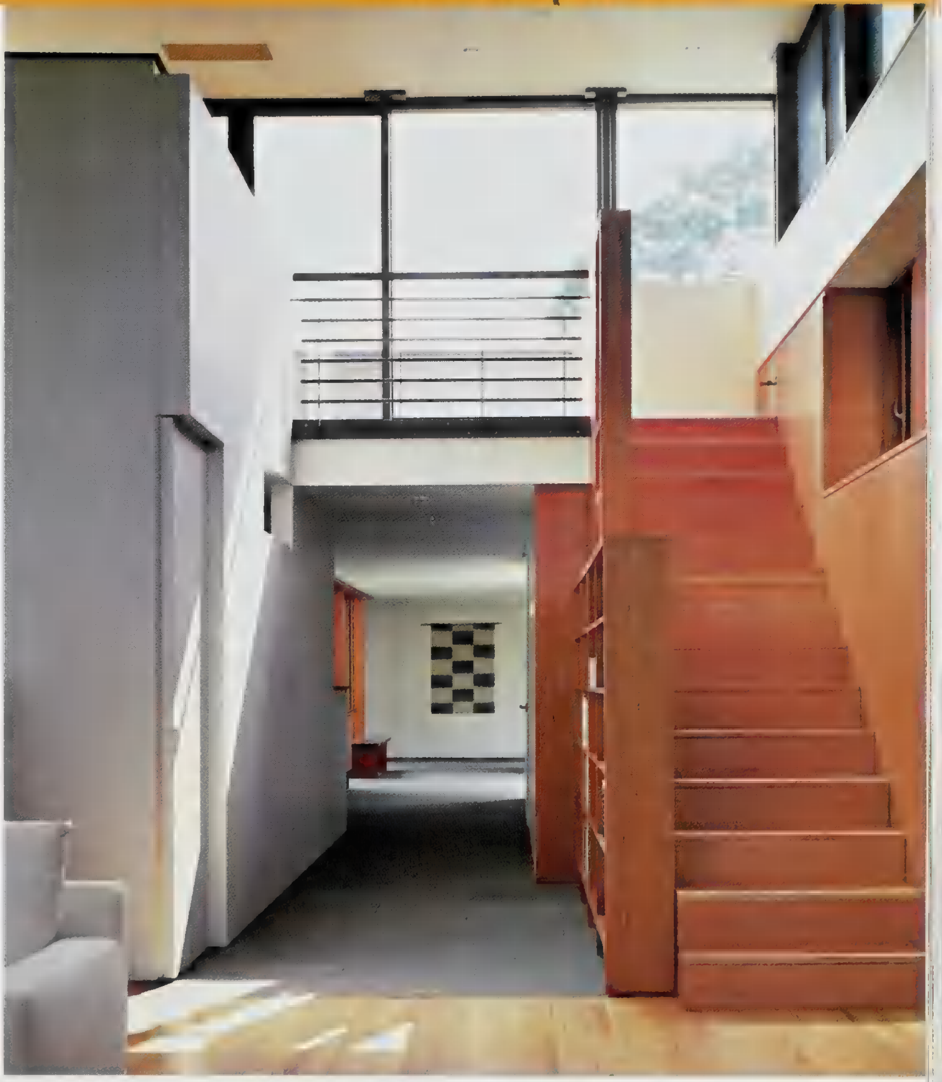


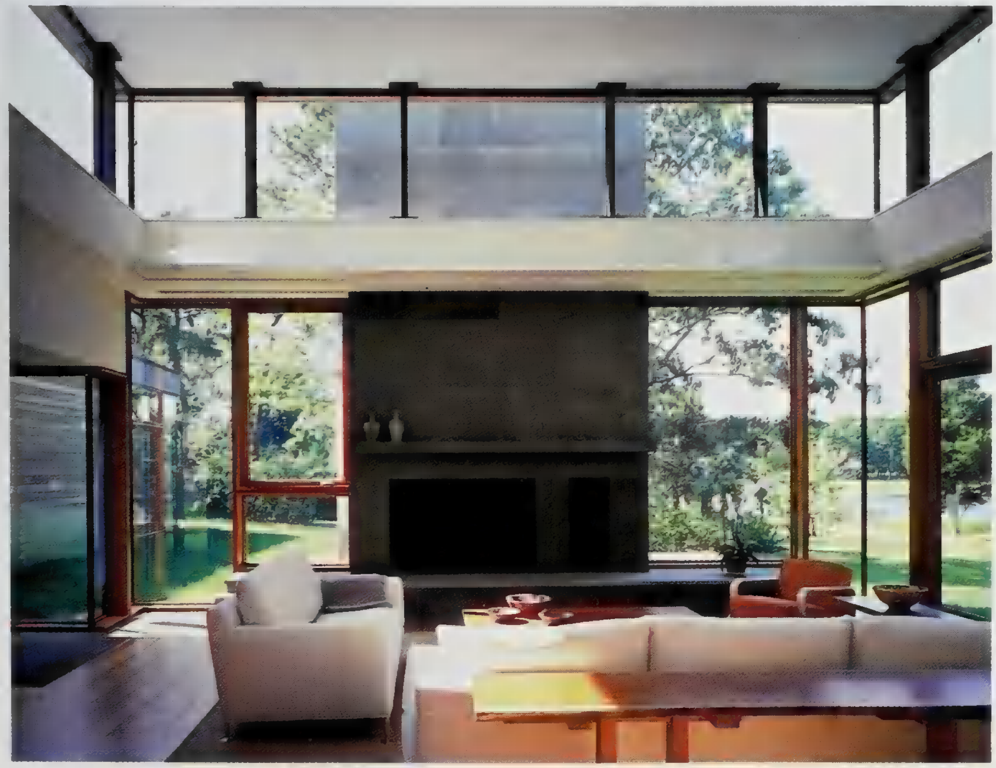
College Conservatory of Music, University of Cincinnati
Cincinnati
Architect: *Pei Cobb Freed & Partners Architects LLP, with associate architect/architect of record NBBJ-Roth*

The architects unified the new and rehabilitated structures of this project by creating a well-proportioned entry court. The details of public circulation, as well as the jewel-like performance spaces, are effectively rendered through the use of a restrained palette of materials and colors. A simple yet strong design.

“SUBTLE AND INFORMAL, YET WITH AN ORDER THAT SHOWS THE ARCHITECT’S RESTRAINT.”







Rifkind Residence
Wainscott, New York
Architect: *Tod Williams Billie Tsien and Associates*

Careful, yet not self-conscious, in its detailing, this house is the successful result of a close partnership between the architects and the owner. It is clear that in both parties’ minds there was a strong desire to site the house to the land in the most sensitive manner possible.

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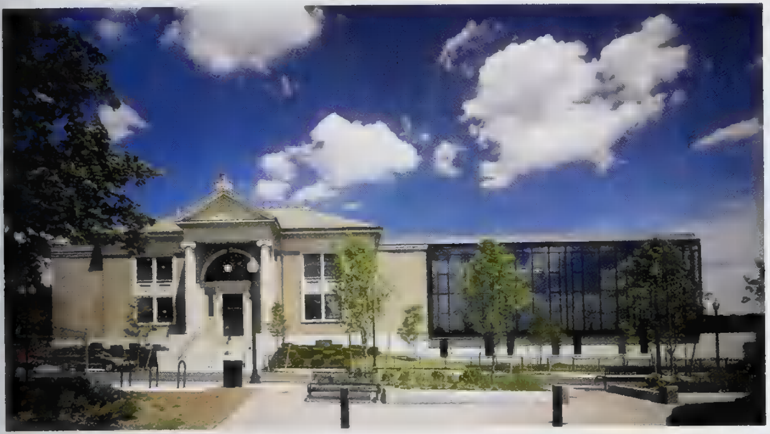

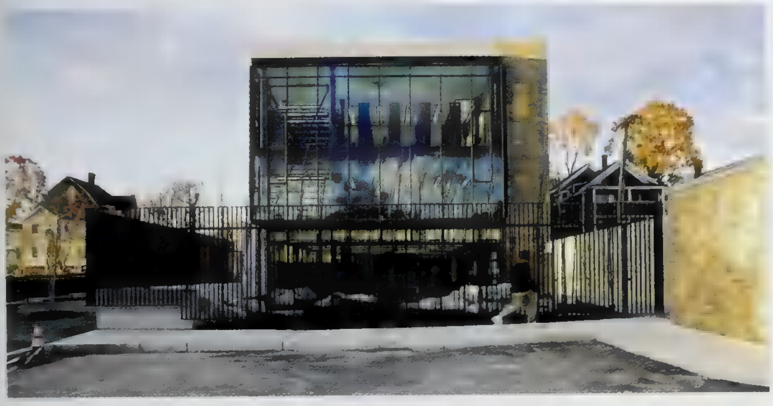

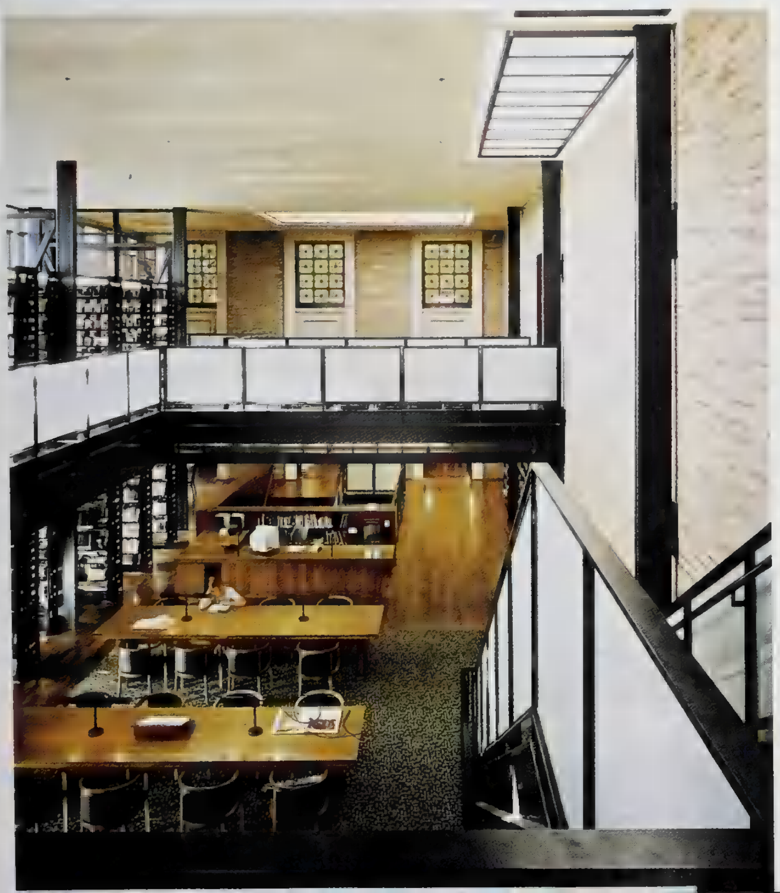

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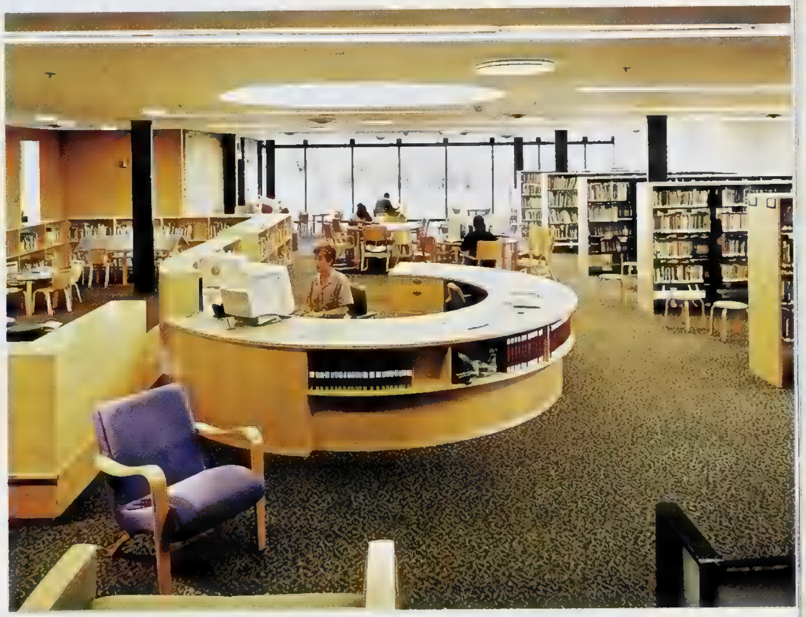
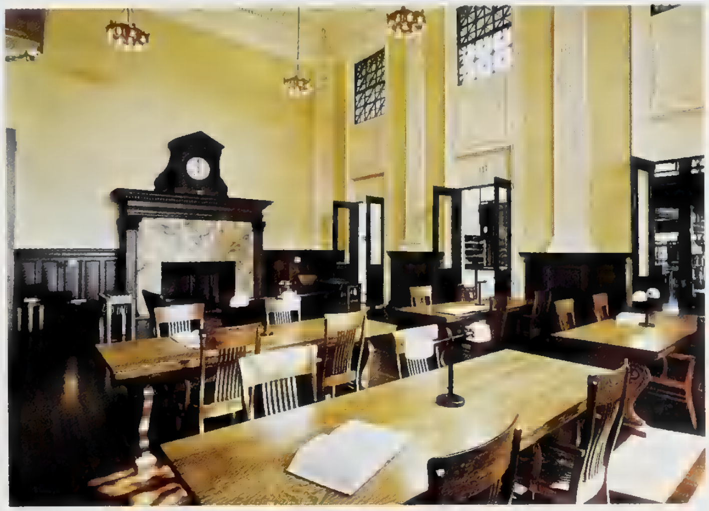


Hyde Park Branch Library
Boston
Architect: *Schwartz/Silver Architects, Inc.*

This project consists of two quite different yet complementary parts: the existing library, which has been sensitively restored and given new purpose, and a modern, glass-enclosed wing. The perfection of proportions and attention to detail in the addition seem to complete the existing structure as though they were built as one.



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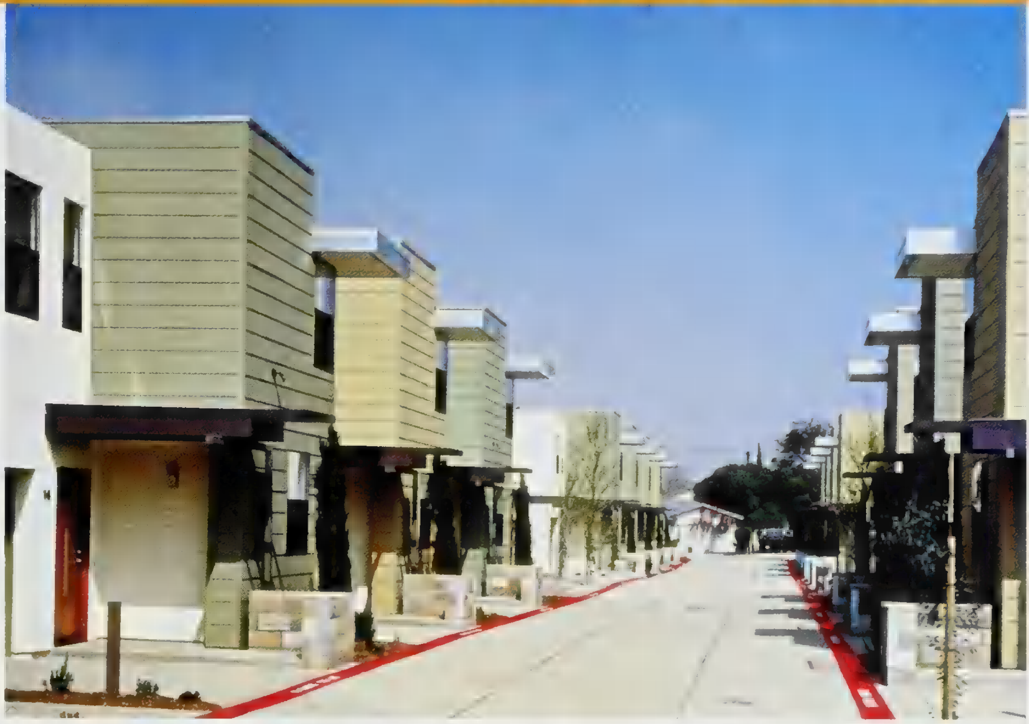
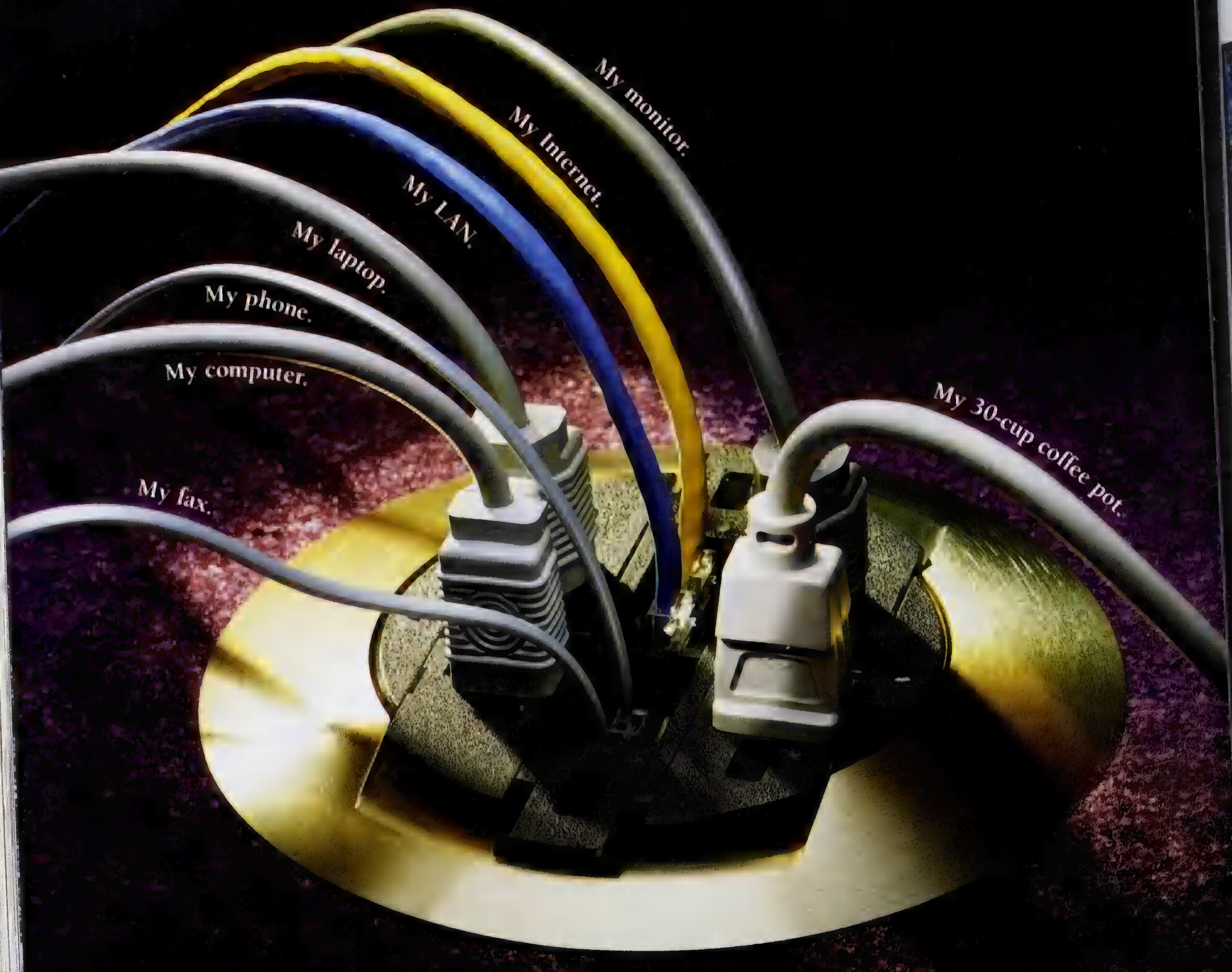


Eleventh Avenue Townhomes
Escondido, California
Architect: *Studio E Architects*

This very impressive low-income, low-density residential project provides housing that is affordable, attractive, and responsive both to its inhabitants and the larger community of Escondido, a town of fruit pickers, packers, and tradesmen. The development, with its rhythmic arrangement of homes, provides rental units of two, three, and four bedrooms and does an excellent job of creating community space. Low-income housing designed with such sensitivity can be as beautiful and friendly as an upscale neighborhood.

PHOTOGRAPHY: © JIM BRADY



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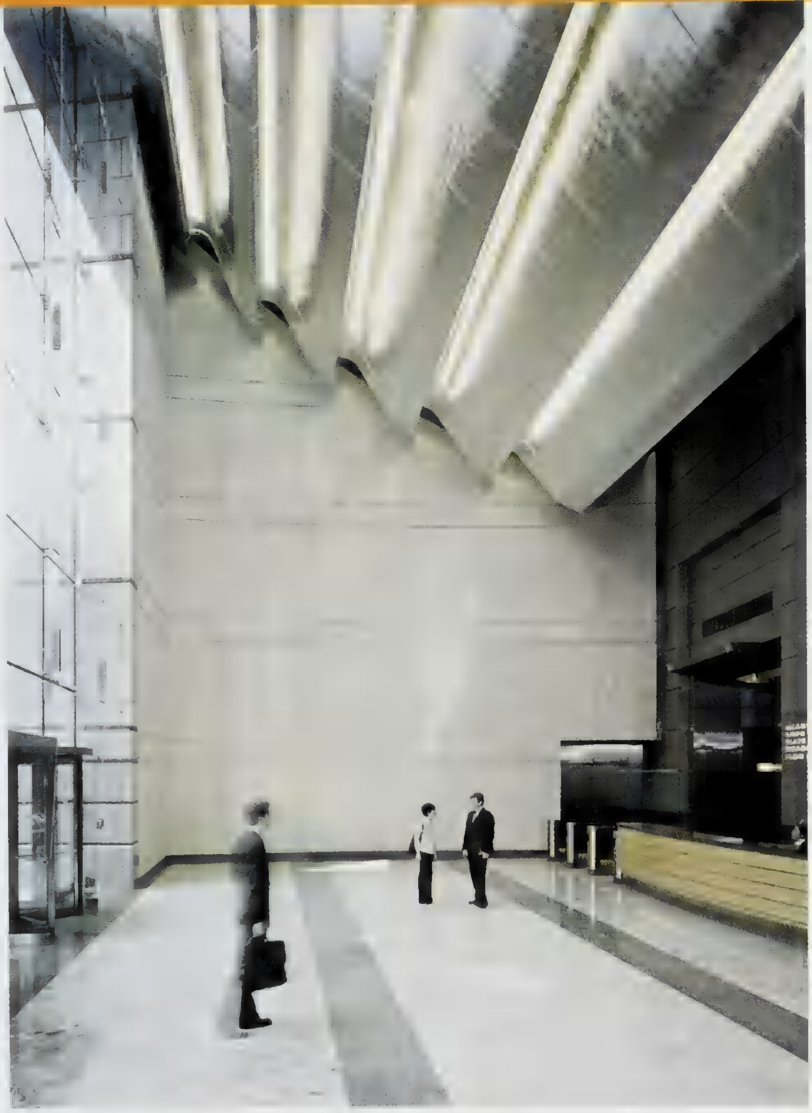
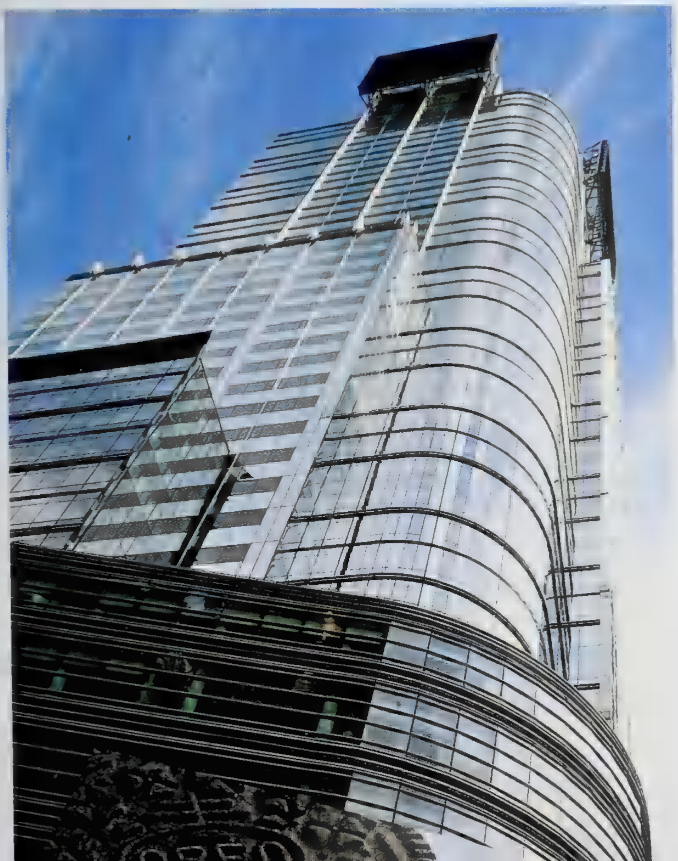
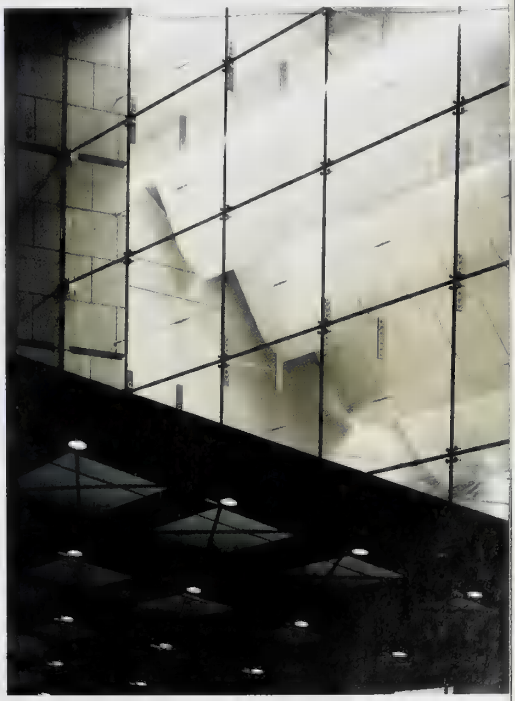


"ATTENTION TO ENERGY-SAVING SYSTEMS MAKES THIS PROJECT EXEMPLARY, AND A LEADER IN THE ADVANCEMENT OF LARGE-SCALE, CENTER-CITY PROJECTS."



The Condé Nast Building
New York City
Architect: *Fox & Fowle Architects*

Conceived as an urban collage, the tower fits in with the disorder of Times Square. Advertisement panels at the top make it a Times Square icon and a landmark visible from anywhere in the city. The building is the result of a successful urban design plan for the Times Square District, which established guidelines for the high-rise industry and the omnipresent signs that typify the bustling cityscape.



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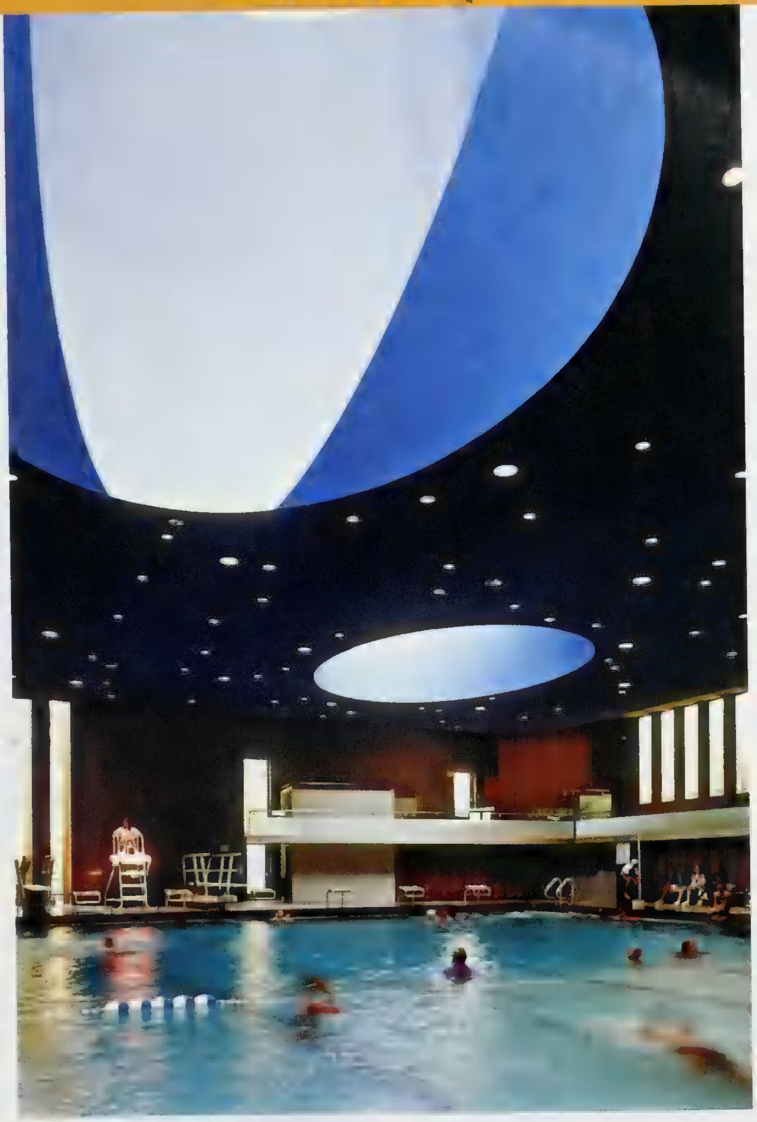
CIRCLE 92 ON INQUIRY CARD

Williams Natatorium at Cranbrook Educational Community
Bloomfield Hills, Minnesota
Architect: *Tod Williams Billie Tsien and Associates*

There is a playfulness as well as freshness about this design. The combination of bold color and attention to detail reveals the architect's enthusiasm, which transfers to the end user. The blue ceiling, with its two openings to the sky and recessed lights that appear as stars at night, is magical. The architect meets the programmatic requirements of a natatorium, while creating a place that is not only functional, but expresses a strong affinity for the existing spirit of the place.



"FRAMING DISTANT VIEWS, THE CALCULATED ARRANGEMENT OF WINDOWS PROVIDES AN EXCELLENT EXAMPLE OF WHAT KAHN REFERRED TO AS THE 'UNMEASURABLE' AND THE 'MEASURABLE.'"

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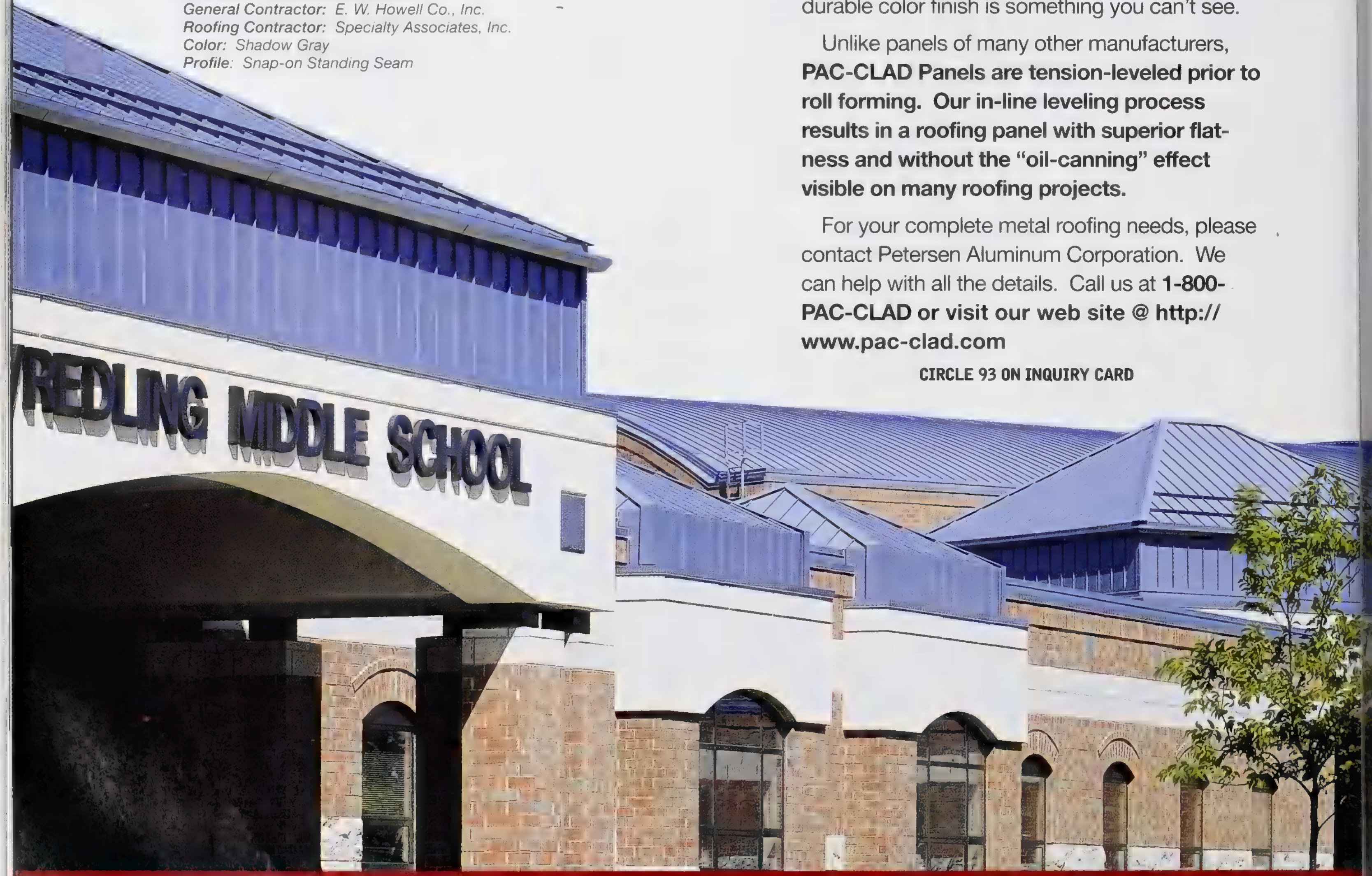
CIRCLE 93 ON INQUIRY CARD

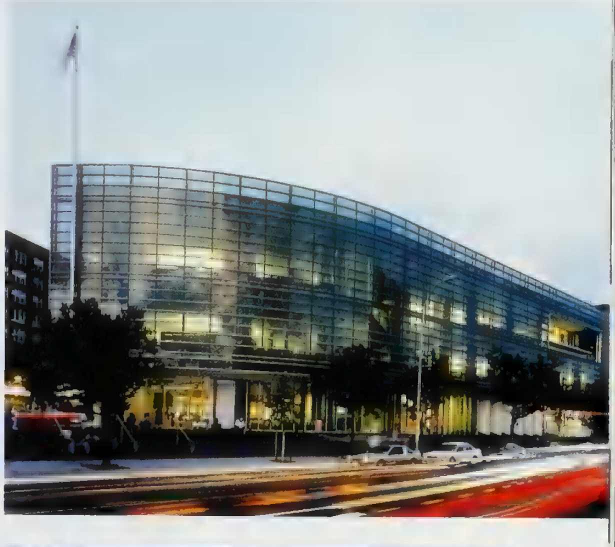
Wredling Middle School
St. Charles, IL
Owner: *St. Charles School District*
Architect: *Hestrup & Associates*
General Contractor: *E. W. Howell Co., Inc.*
Roofing Contractor: *Specialty Associates, Inc.*
Color: *Shadow Gray*
Profile: *Snap-on Standing Seam*

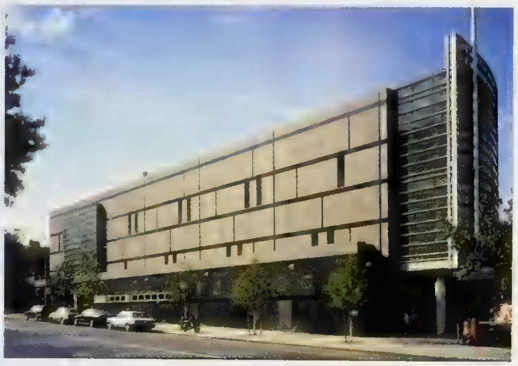


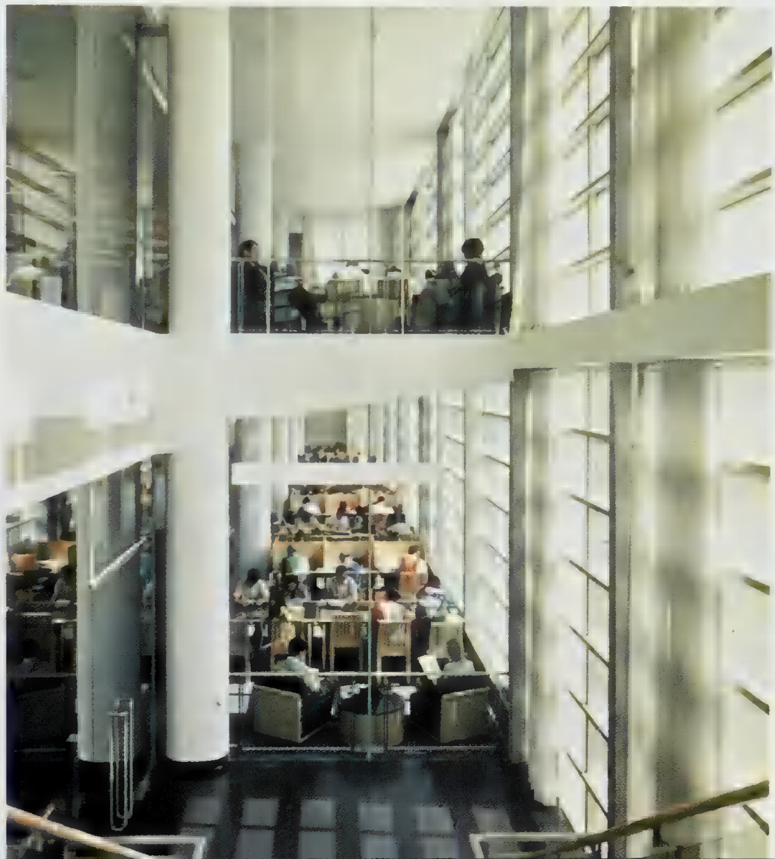
Queens Borough Public Library, Flushing Branch
Flushing, New York
Architect: *Polshek Partnership*

An open, welcoming public library is created through the use of a transparent wall—a metaphor for accessibility—running the entire length of one side of the building. Both the entrance and reading areas are arranged along this wall, so users become part of the street life outside. The community-friendly program creates spaces that can be used by everyone in this multicultural neighborhood.

"I OBSERVED THE ACTIVITY AROUND THE BUILDING FOR MANY HOURS. THE LIBRARY FUNCTIONS AS AN ESSENTIAL COMMUNITY CENTER."







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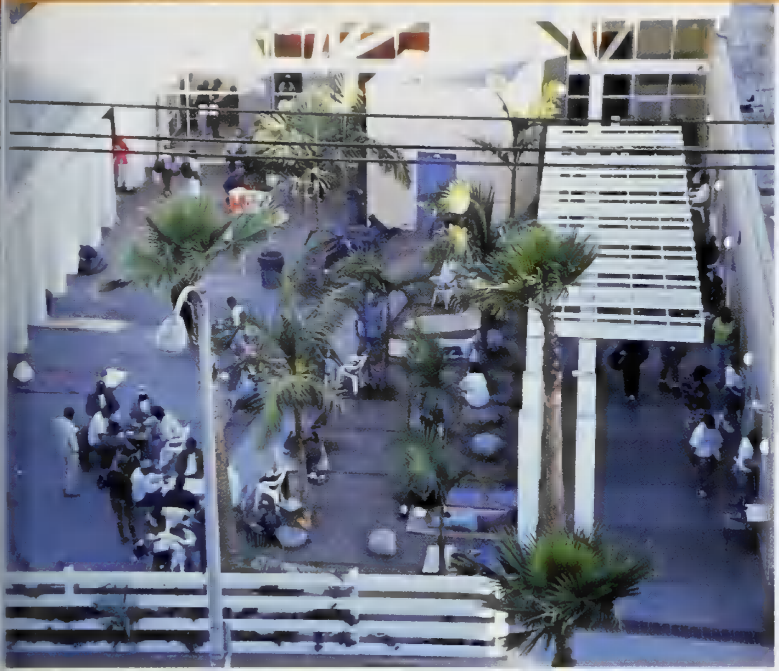
CIRCLE 94 ON INQUIRY CARD

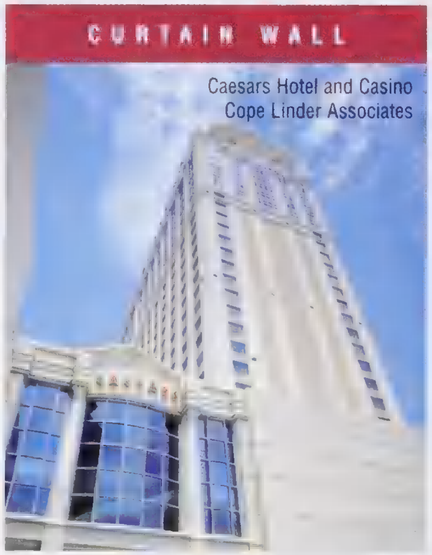


Downtown Homeless Drop-in Center
Los Angeles
Architect: *Michael B. Lehrer, AIA/Lehrer Architects, and Farooq Ameen, AIA/Farooq Ameen and Associates*

By responding to the different and specific requirements of the users of this space with such a carefully considered design, the architect managed to create a new building type. In this very public setting, the calming elements of a garden provide temporary respite from the harsh life of the street. With simple living facilities on three sides of the courtyard and the fourth side open to the street, the center is a welcome and dignified haven for the homeless.

> "THIS NEW BUILDING TYPE PROVIDES A TEMPORARY SHELTER FOR THE DISENFRANCHISED, AS SOCIETY SEEKS LONGER-TERM SOLUTIONS."

SUPERIOR INN-TELLIGENCE



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CIRCLE 95 ON INQUIRY CARD

The New York Times Printing Plant
Flushing, New York
Architect: *Polshek Partnership; architect of record, Parsons Main of New York, Inc.*

The successful blending of industrial engineering and architectural design results in a very comfortable working environment, despite its scale and technological emphasis. Large expanses of glass offer dramatic views of machinery.

"THE BUILDING BECOMES A BILLBOARD APPROPRIATE FOR BOTH ITS EXPRESSWAY LOCATION AND THE ICONIC STATUS OF THIS NEW YORK INSTITUTION. DONE WITH FRESHNESS AND VERVE."

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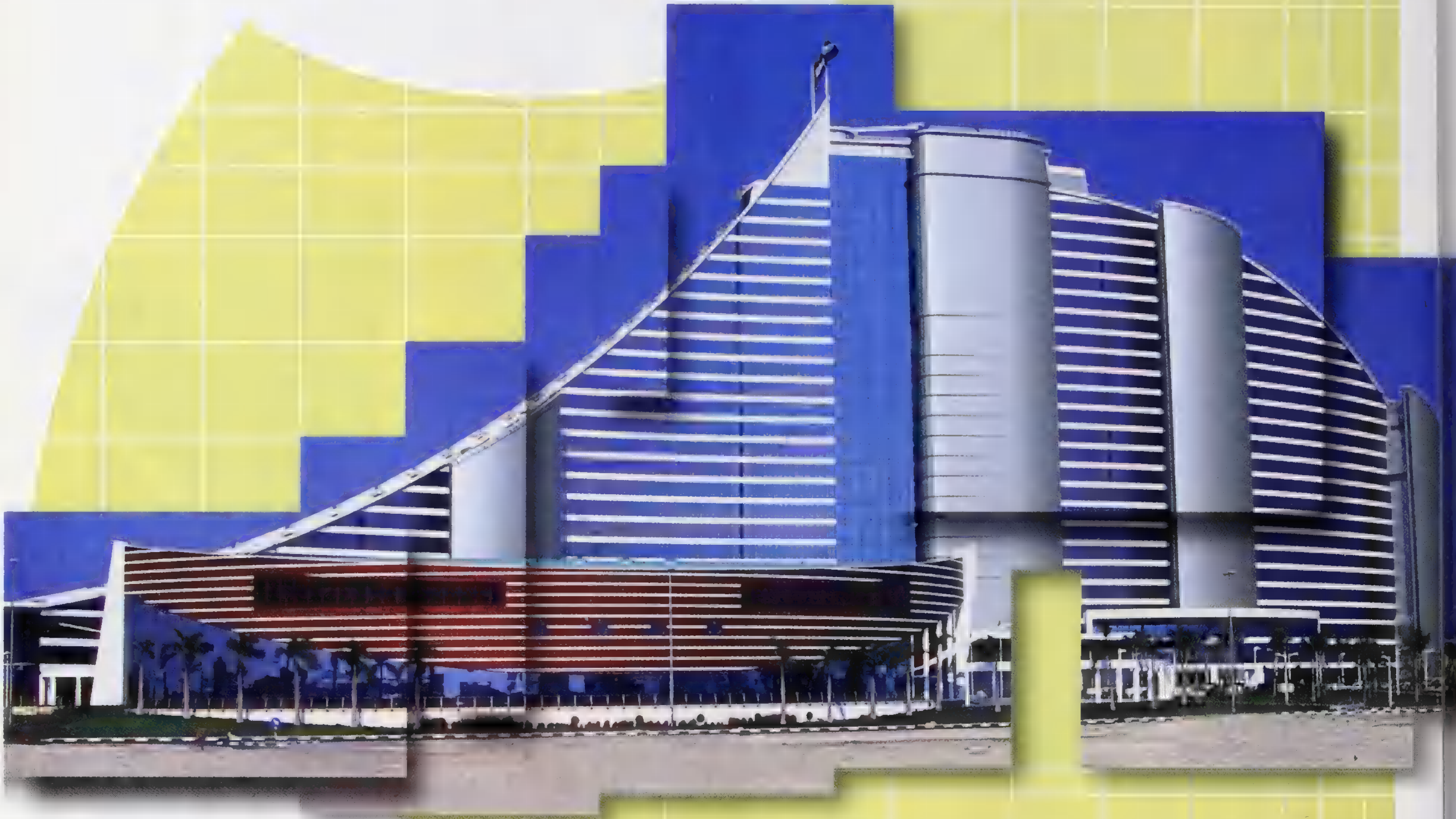

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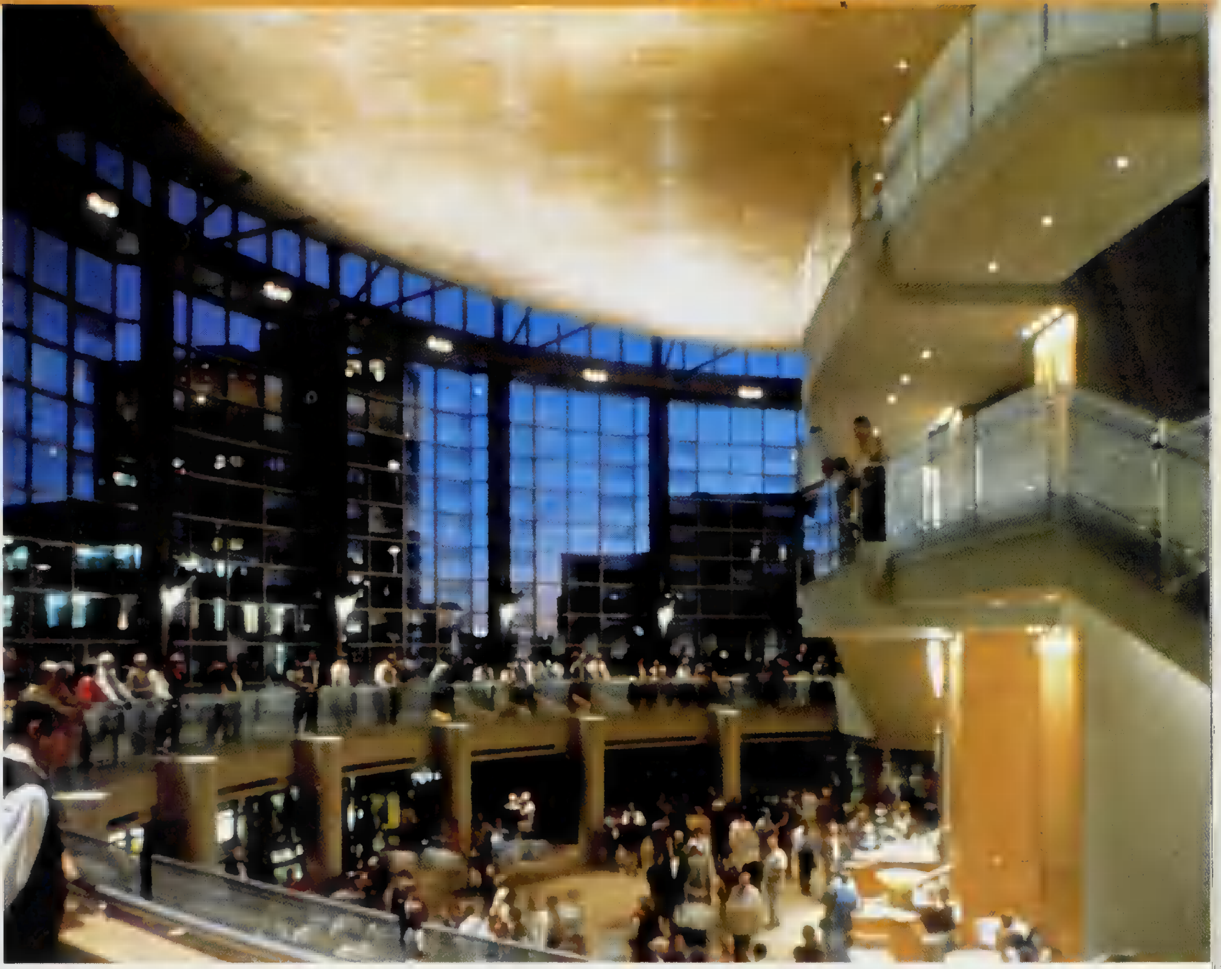
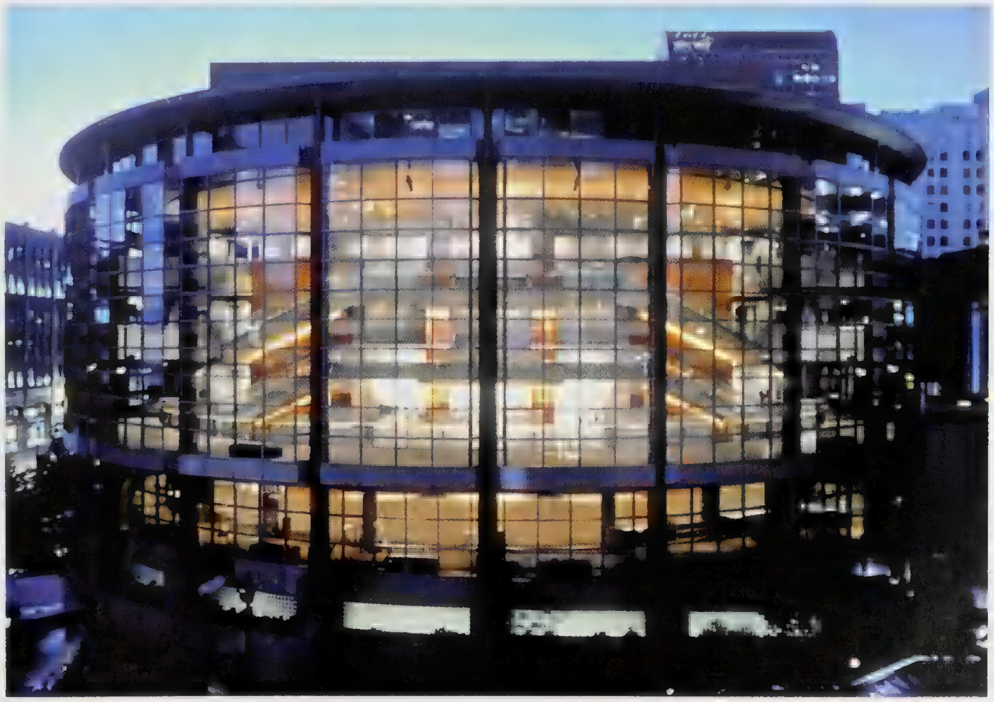


Benaroya Hall
Seattle
Architect: *LMN Architects*

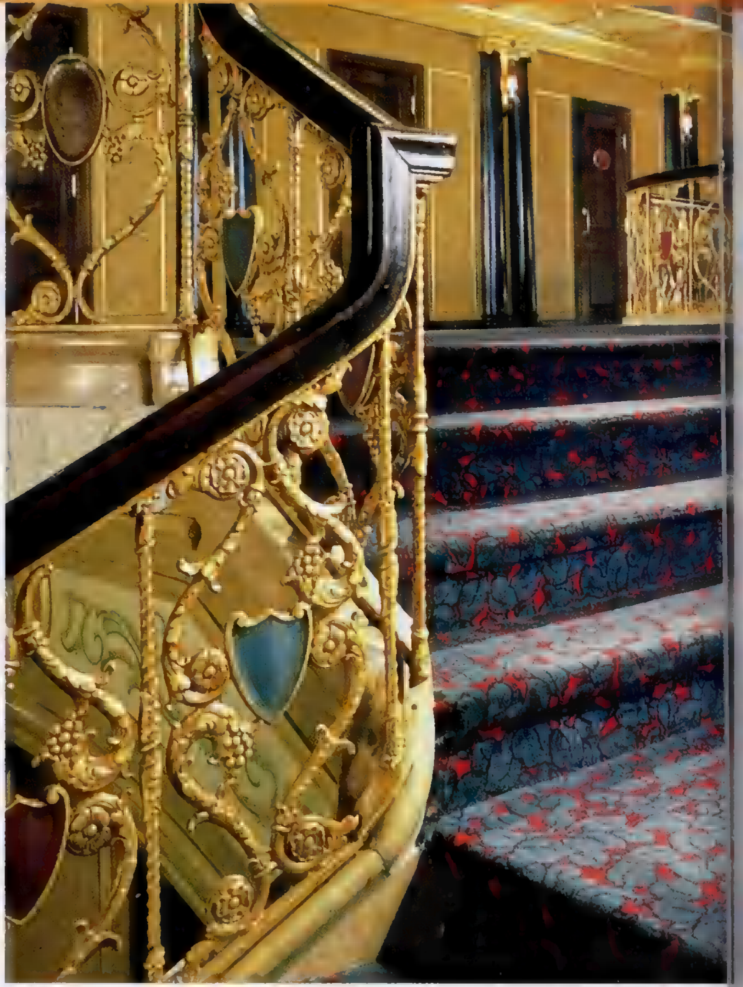
A most urban building. The design of public circulation within the open lobby not only gives definition to the urban context, but also creates an event reminiscent of the Paris Opera House. Warm, natural wood finishes, combined with modern steel-and-glass facades addressing the adjoining city streets and Puget Sound beyond, give the building a strong presence.

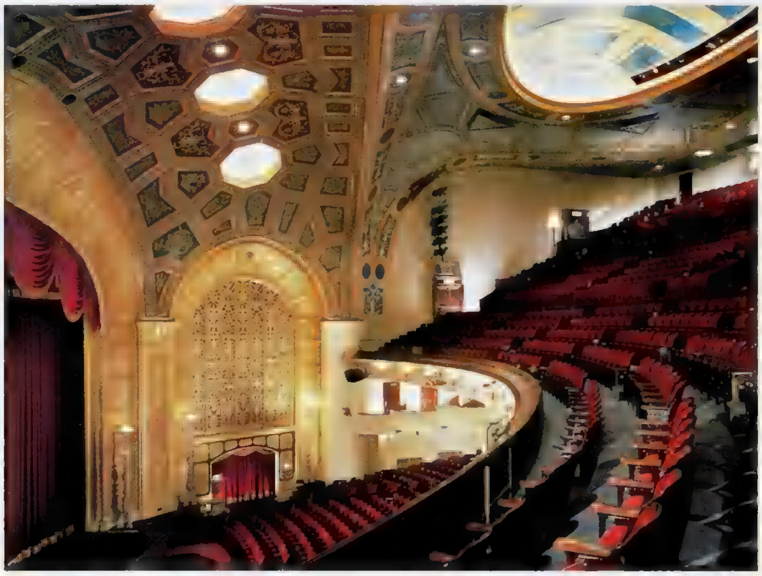
"SITUATED ON ONE OF SEATTLE'S MAJOR DOWNTOWN STREETS, IT GREETS AND WELCOMES THE PUBLIC WHETHER OR NOT THEY ARE CONCERTGOERS."

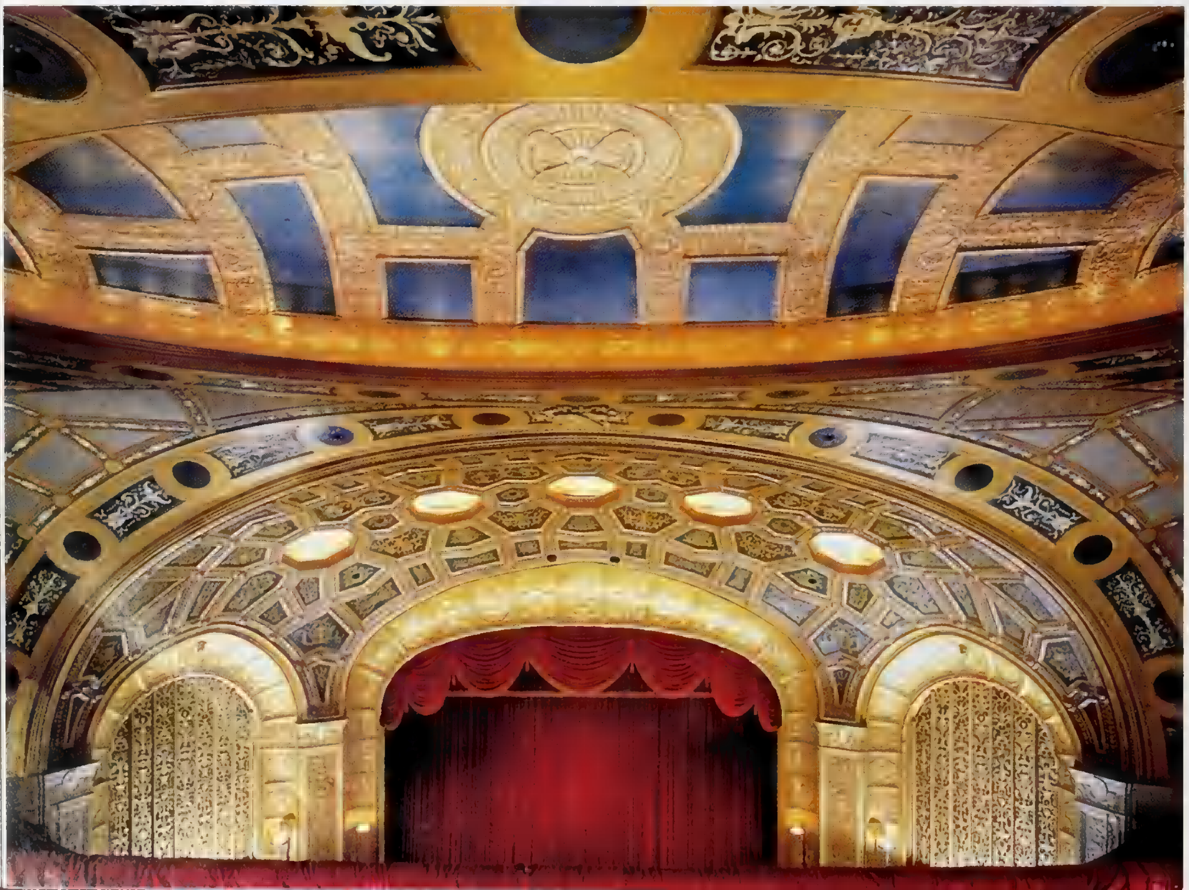


INTERIORS

"AUTHENTIC MATERIALS AND METHODS CREATE A FAITHFUL AND PAINSTAKINGLY ACCURATE INTERIOR."



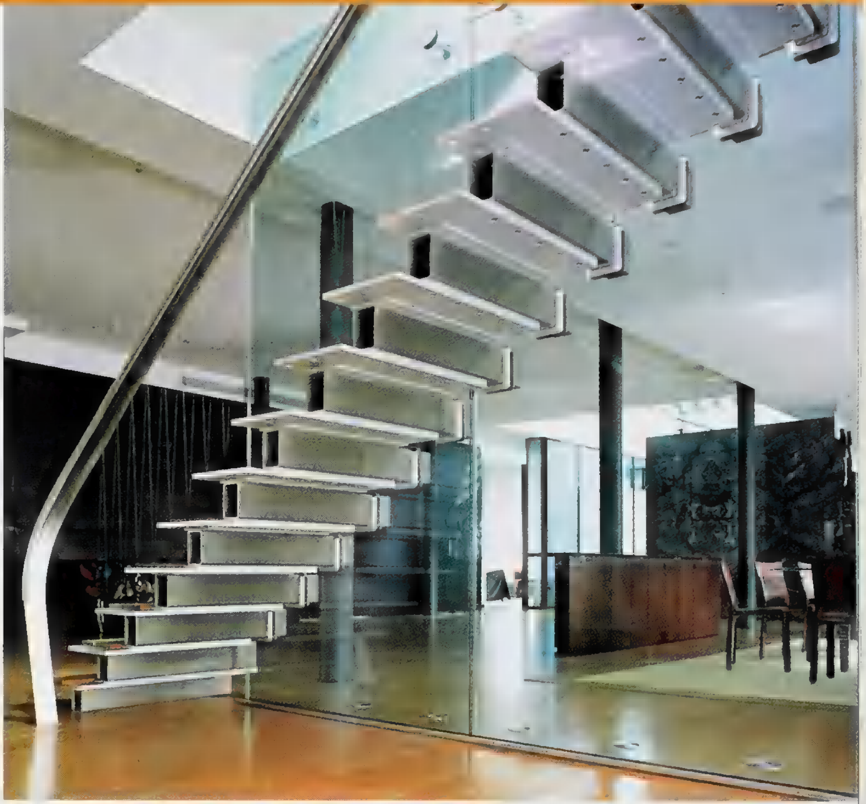


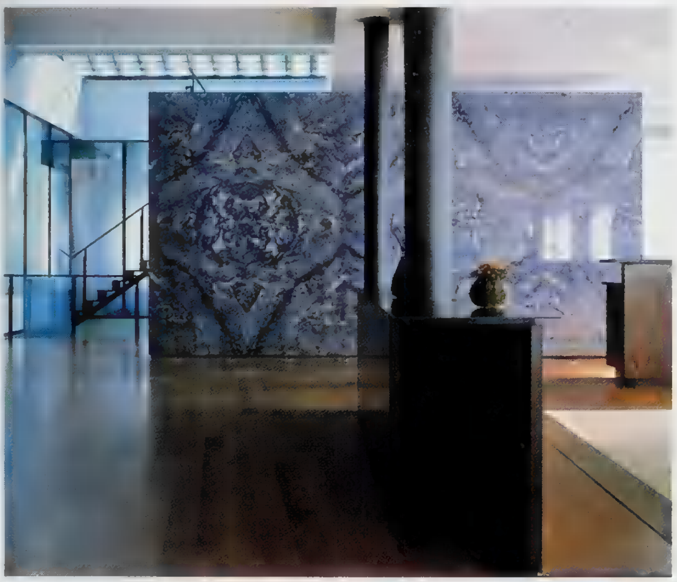


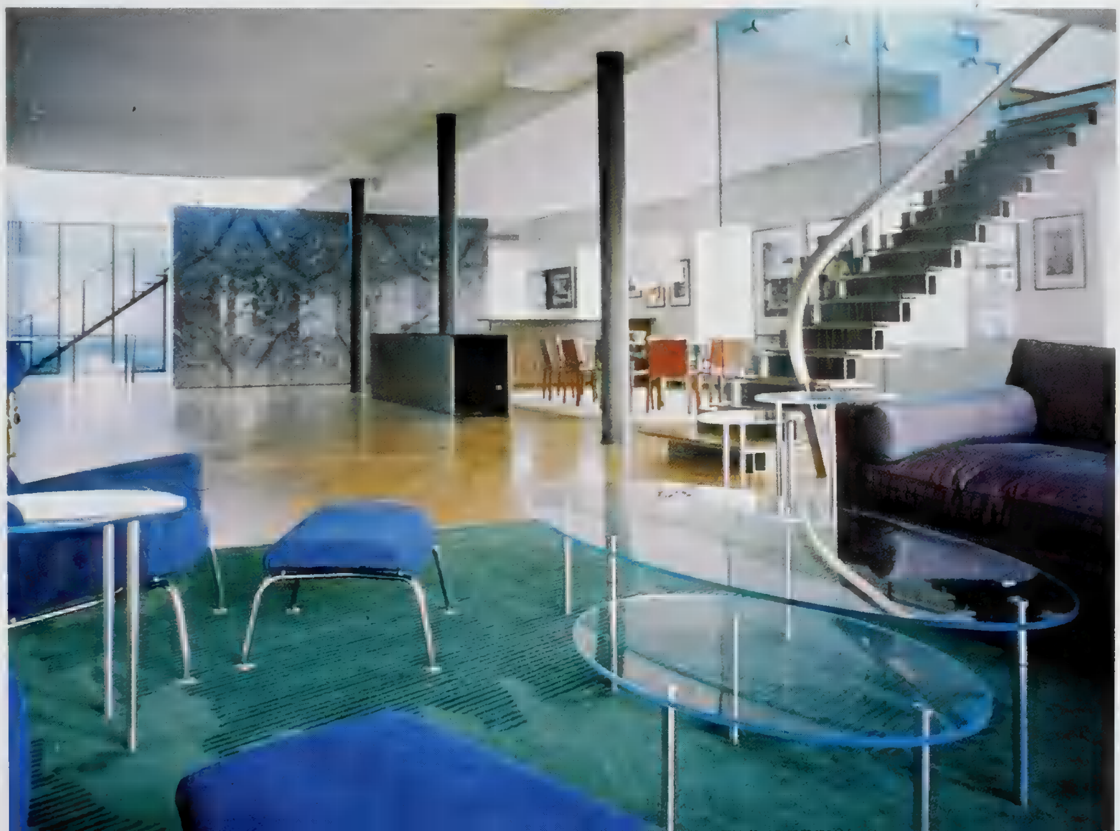
Detroit Opera House
Detroit
Architect: *The Albert Kahn Collaborative, Inc.; programming and preliminary design, JPRA Architects*

The original amalgam of flamboyant color and dramatic lighting was carefully re-created throughout the theater. Forensic analysis revealed an original color palette dominated by gilded ochre, browns, and blues. The architect salvaged and saved this historic building from demise—a courageous move to bring back one of Detroit's first downtown buildings.

> "THE DESIGN TREATS THE SPACE AS A LANDSCAPE, RESPONDING TO THE DAILY AND SEASONAL CYCLES OF THE SUN—LARGE OPEN SPACES ARE FLOODED WITH NATURAL LIGHT FROM SEVERAL EXPOSURES."







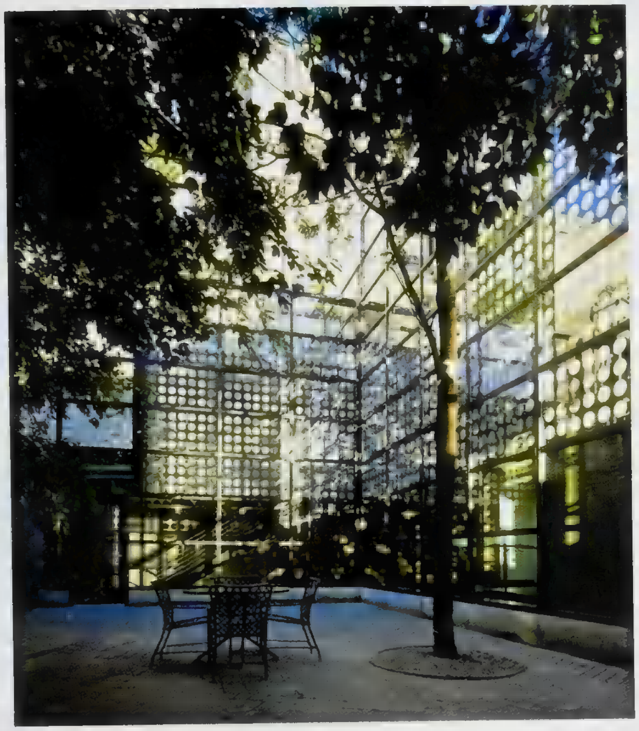
SoHo Loft
New York City
Architect: *Architecture Research Office*

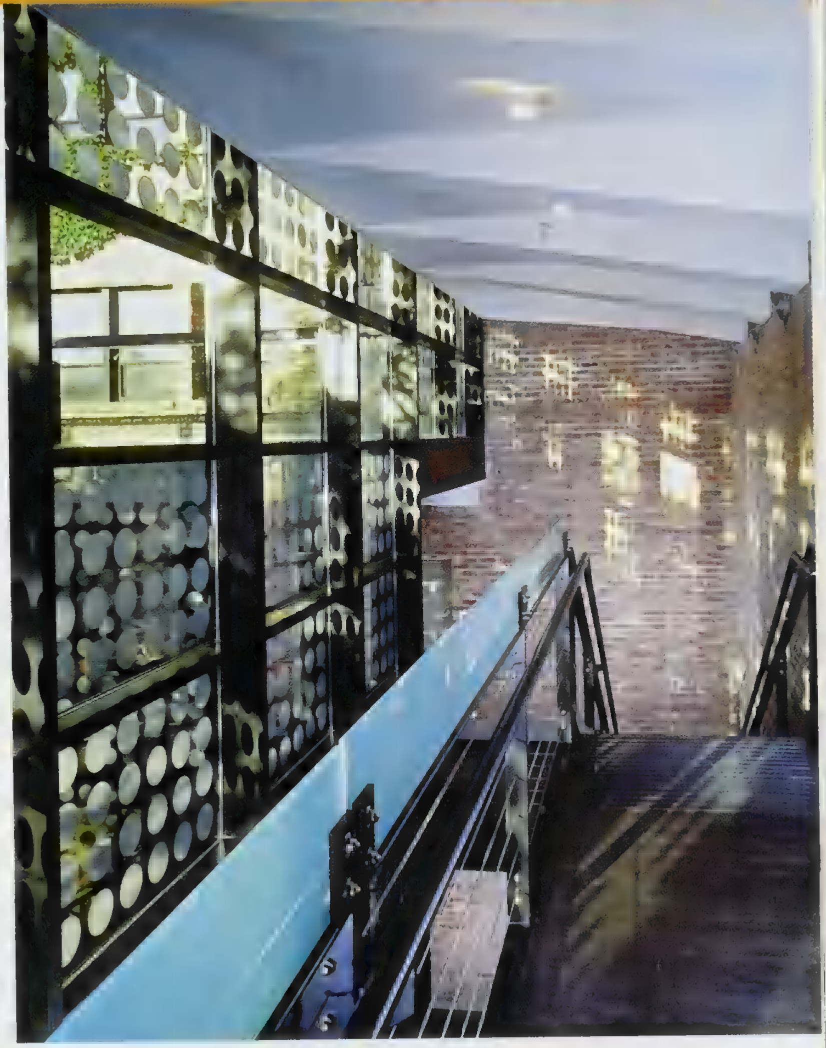
This transformation of two floors and a rooftop of a warehouse to modern living environment is all about light, space, and elegant expression. The materials were selected for their color, texture, reflectivity, and transparency. A cascading glass-supported stair, the prominent sculptural element on the main floor of the loft, provides access to a roof garden above and defines discrete spaces for the living and dining areas.

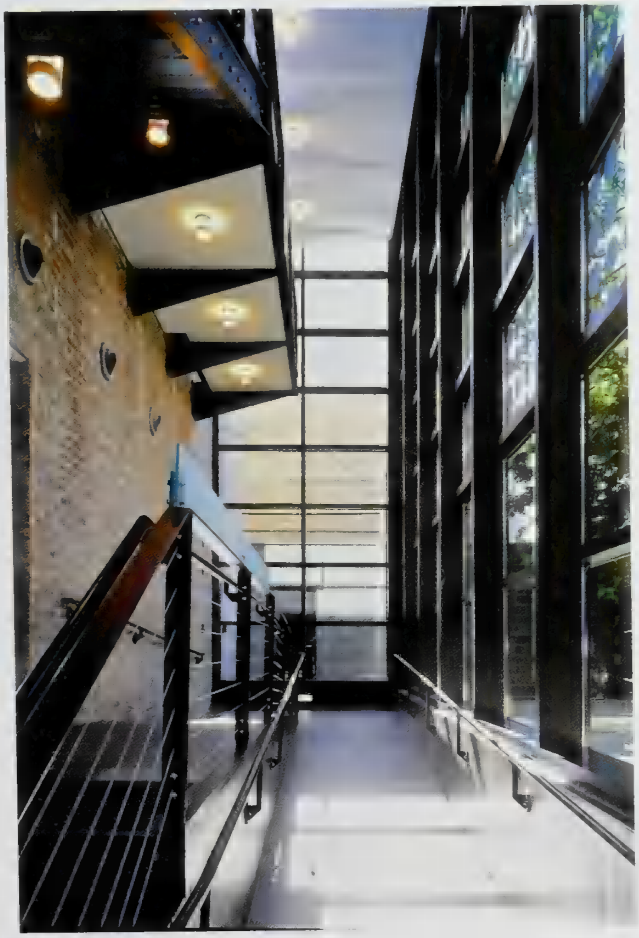
“DISPLAY OF PRODUCTS BECOMES A POETIC STATEMENT OF LIGHT, SPACE, AND TRANSPARENCY.”

Herman Miller National Showroom
Chicago
Architect: *Krueck and Sexton Architects*

This project elevates a showroom to the status of an art gallery. It advances the design philosophy and traditions of the client through a series of rich and diverse experiences, combining rigorous attention to craft with sensuous layering of materials, colors, and light. The inventive ceiling echoes the organic shapes found in the furniture.





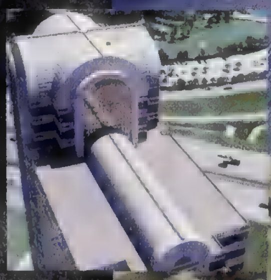


PHOTOGRAPHY: © BARBARA KARANT

"THIS PROJECT PRESERVES THE BEST OF THE PAST WHILE INSERTING A DRAMATIC CONTEMPORARY EXPRESSION."

Alliance Française de Chicago
Chicago
Architect: *DeStefano and Partners*

Fusing a two-building campus together entailed the adaptive reuse of a bank and the imaginative linking of properties. The steel prismatic walkway, with its clear, fritted-glass envelope, enlivens the courtyard.



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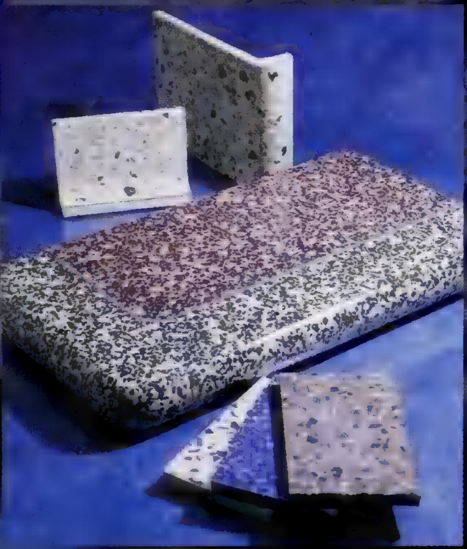

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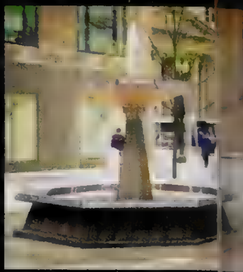

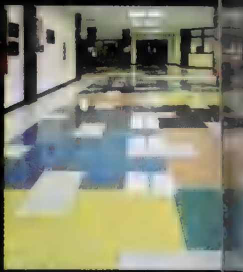

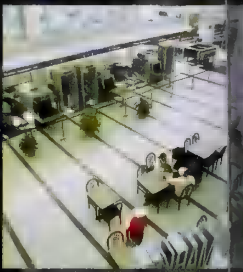

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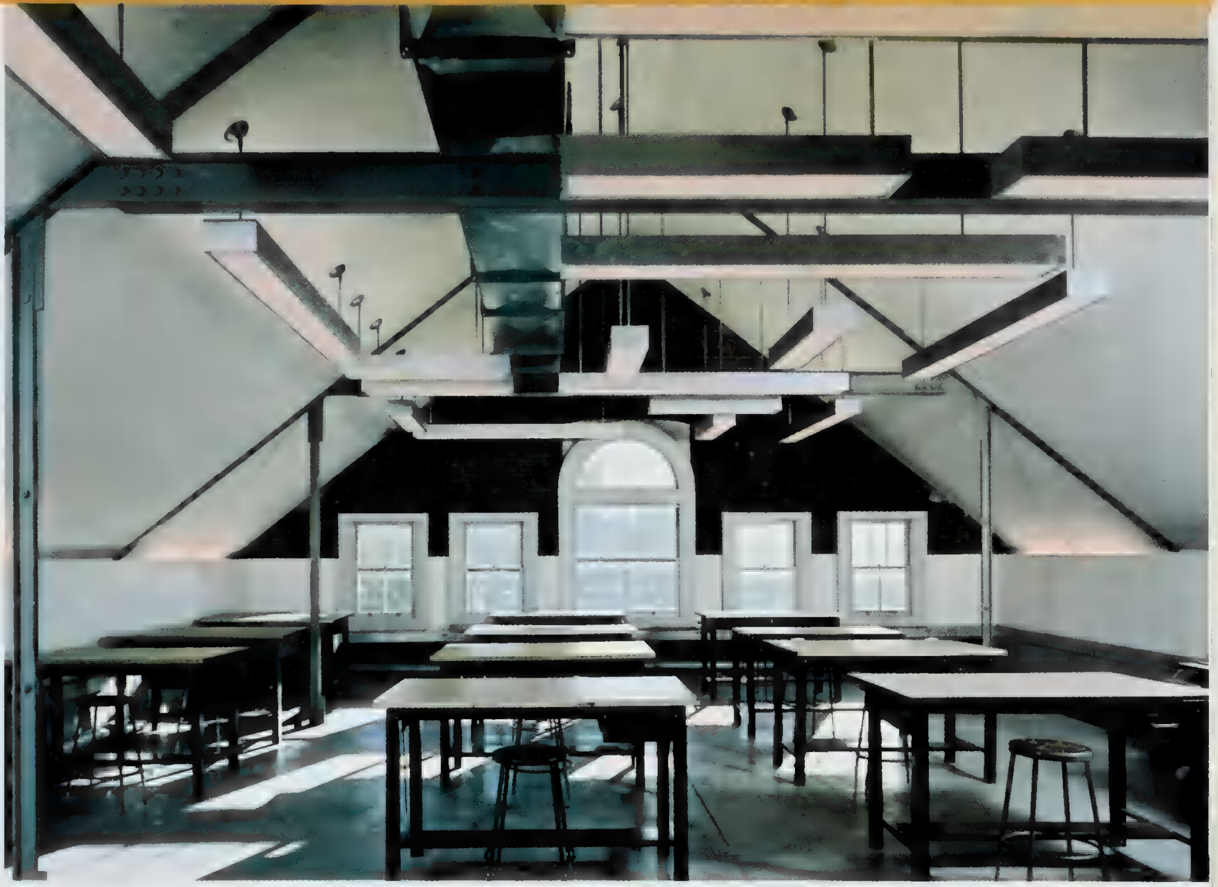
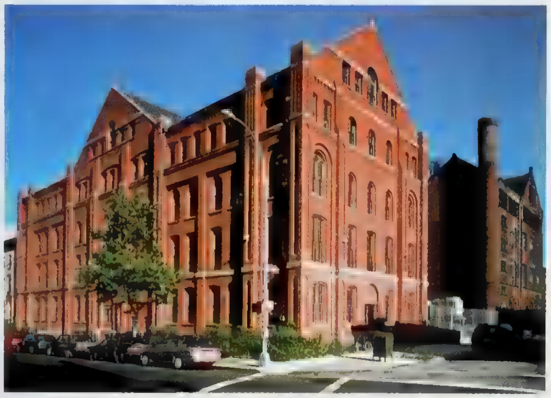
CIRCLE 77 ON INQUIRY CARD

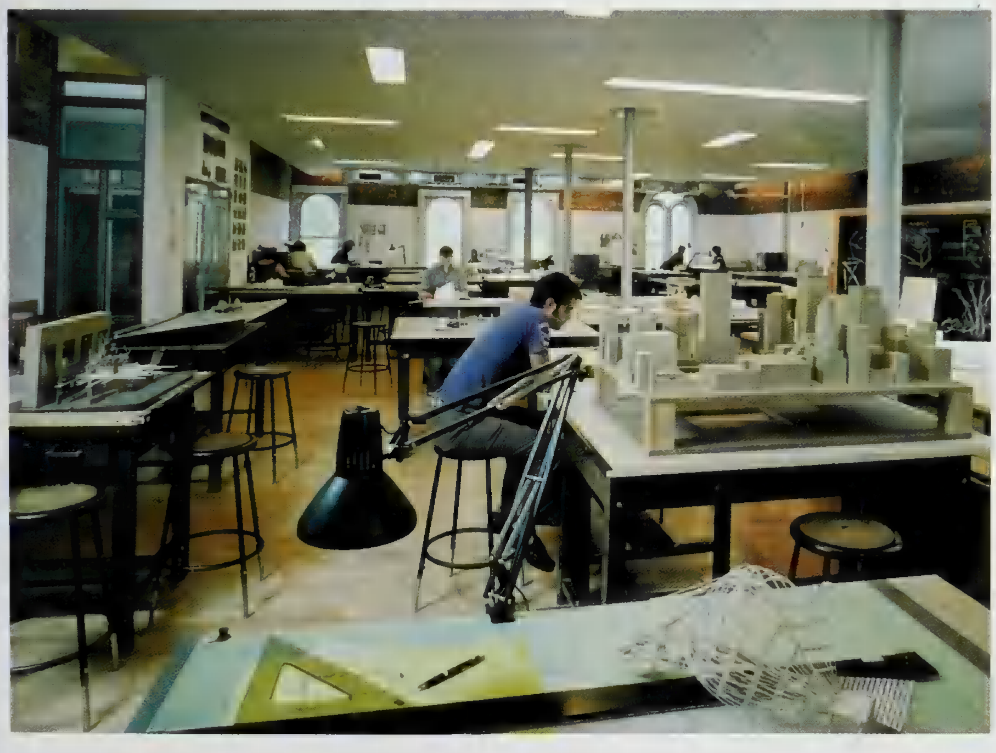
Higgins Hall, Pratt Institute School of Architecture
Brooklyn, New York
Architect: *Rogers Marvel Architects PLLC; preservation architect, Ehrenkrantz and Eckstut Architects*

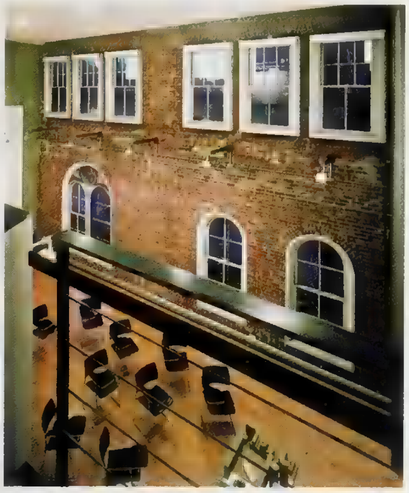
The architect revealed the bones in this 130-year-old academic building that has survived four additions and a major fire. Classrooms, well lit with natural and artificial lighting, have been reconceived to support new uses for architecture students. The design reveals parts of the original construction and systems of the building, and thus acts as a living laboratory of architecture.



> "THIS SENSITIVE AND CONSISTENT INTRODUCTION OF NEW DESIGN EFFECTIVELY CONTRASTS AND LIES WITHIN THE RUINS OF THE OLD."







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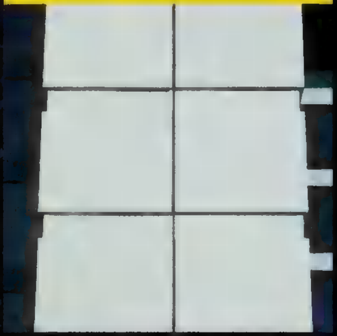
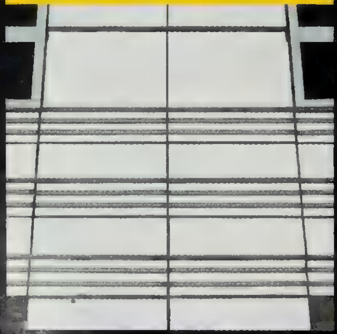


Option
Integrated C/S Louvers

Option
Variable Reveals

Option
Duracast Finish

Option
Variable Profiles



Option
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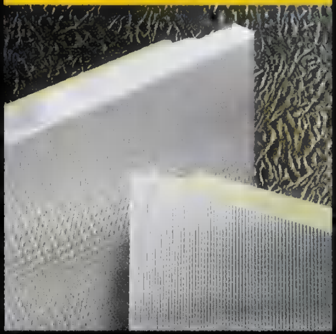

Peakview Towers, Englewood, CO
Architects: WDG.Habib Architects, Dallas, TX
Oz Architecture, Denver, CO
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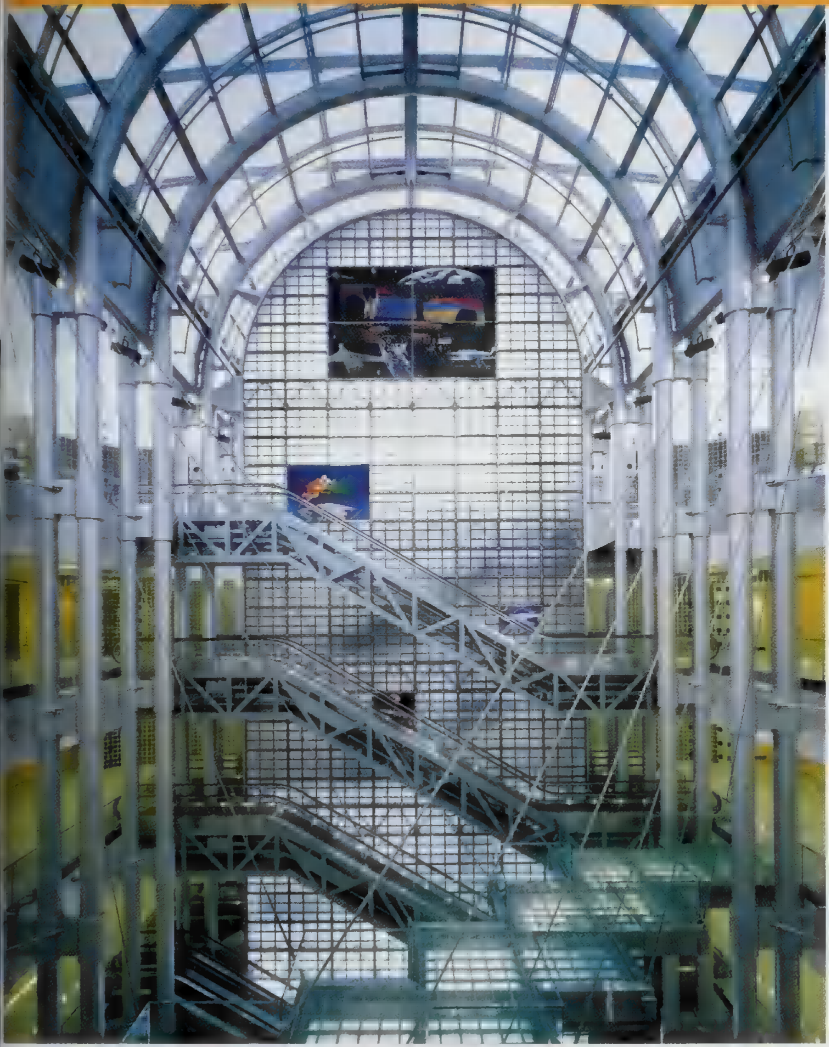
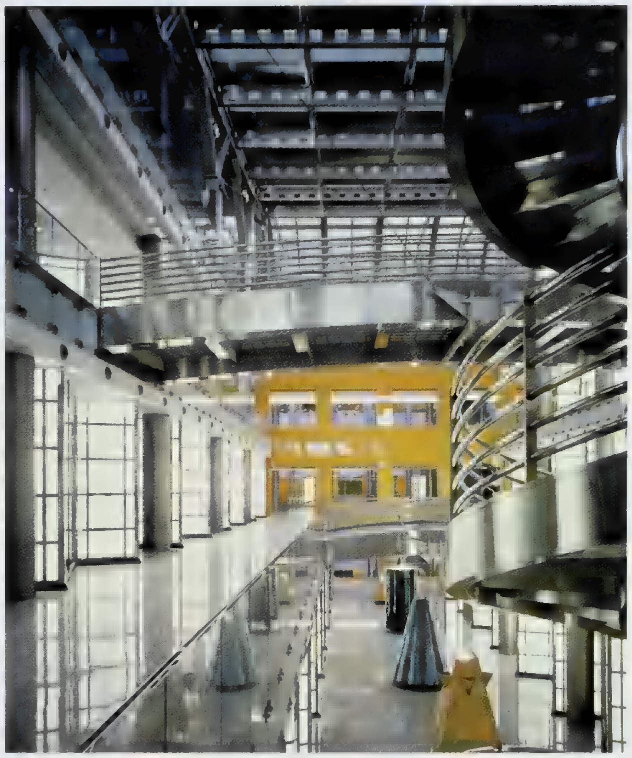
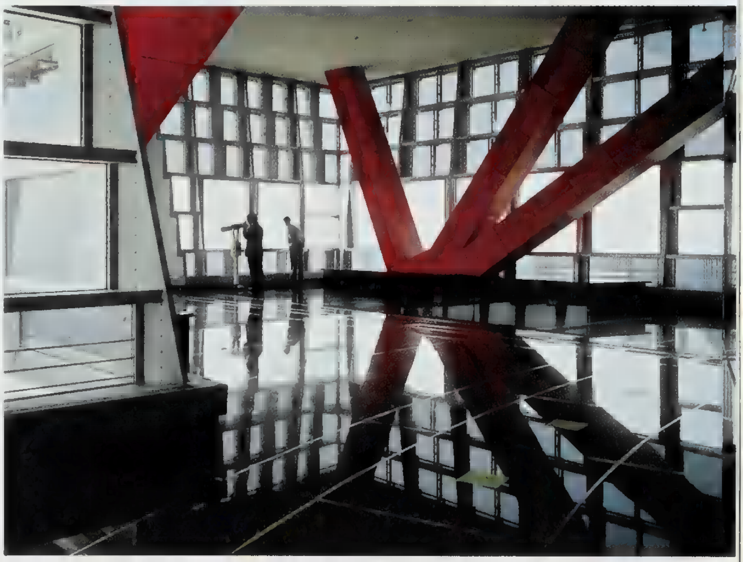
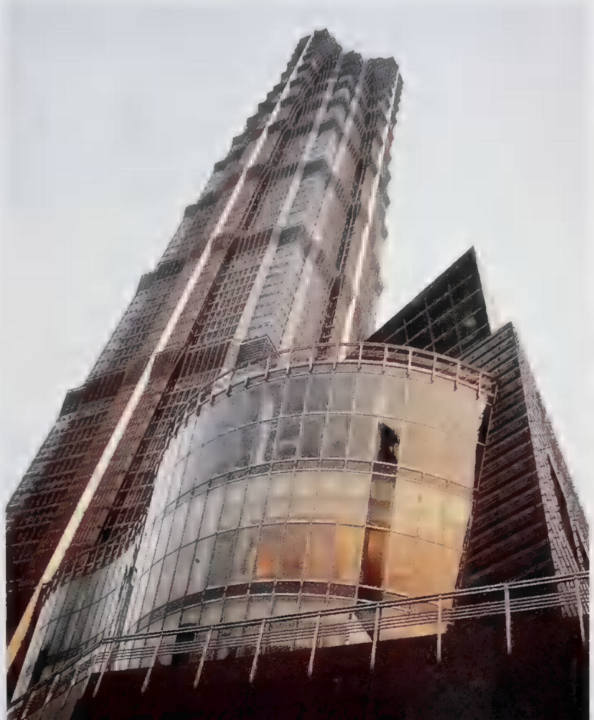
CIRCLE 98 ON INQUIRY CARD







"DRAMATIC SPATIAL EXPERIENCES ARE MADE COHERENT THROUGH SOPHISTICATED AND EXPRESSIVE BUILDING TECHNOLOGY."



Jin Mao Tower
Shanghai, China
Architect: *Skidmore, Owings & Merrill LLP; associate architect, Shanghai Institute of Architectural Design and Research*

The tallest building in China and the centerpiece of Shanghai, this metallic building is a monument to Shanghai's confidence in its future. Large-scale interiors are mostly glass and steel, and soft hues of accent color identify a network of bridges that traverse a vast interior space.

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Palmetto Elementary School, Orlando, Florida
Architect: Reynolds, Smith and Hills Inc.
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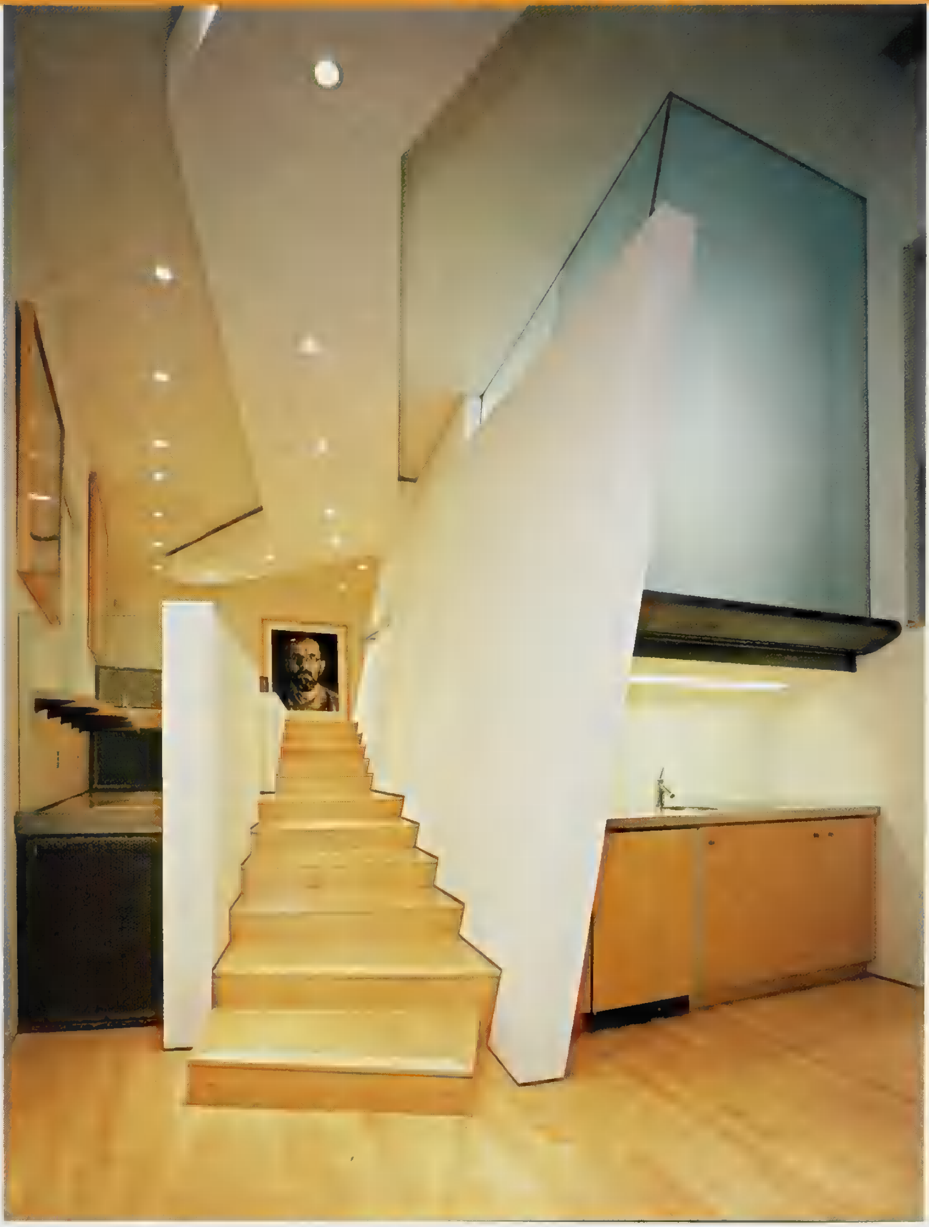
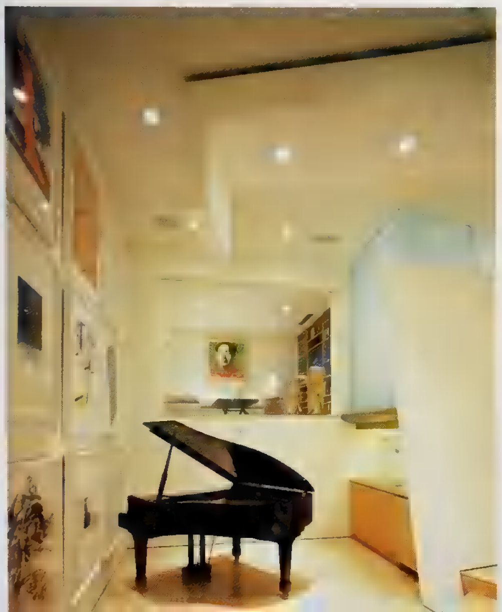
CIRCLE 99 ON INQUIRY CARD

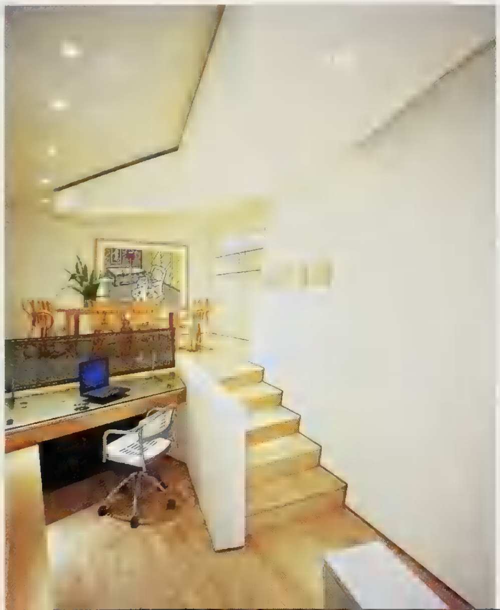


Jacobs Residence
Subterranean
Sherman Oaks, California
Architect: *Patrick J. Tighe, AIA*

An outstanding use of daylighting in a below-grade space provides needed room to expand this residence, severely limited by hillside terrain. This oasis of angled walls and multiple floor planes offers an imaginative backdrop for the owner's art collection.

"KILLER IDEA PROJECT — A SINGLE SCULPTURAL FORM IN WHICH PROGRAM PIECES ARE NEATLY AND DEFTLY ACCOMMODATED."





PHOTOGRAPHY: © ART GRAY

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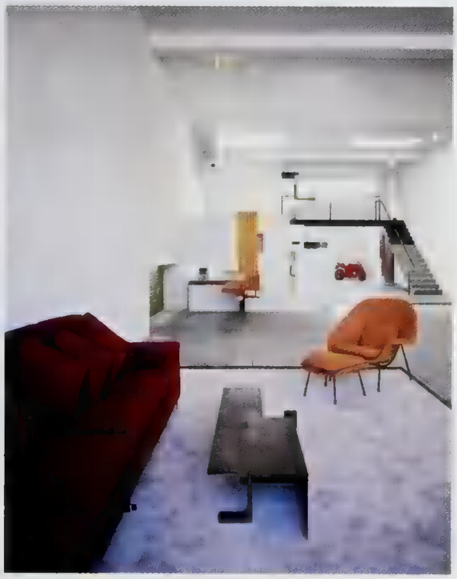
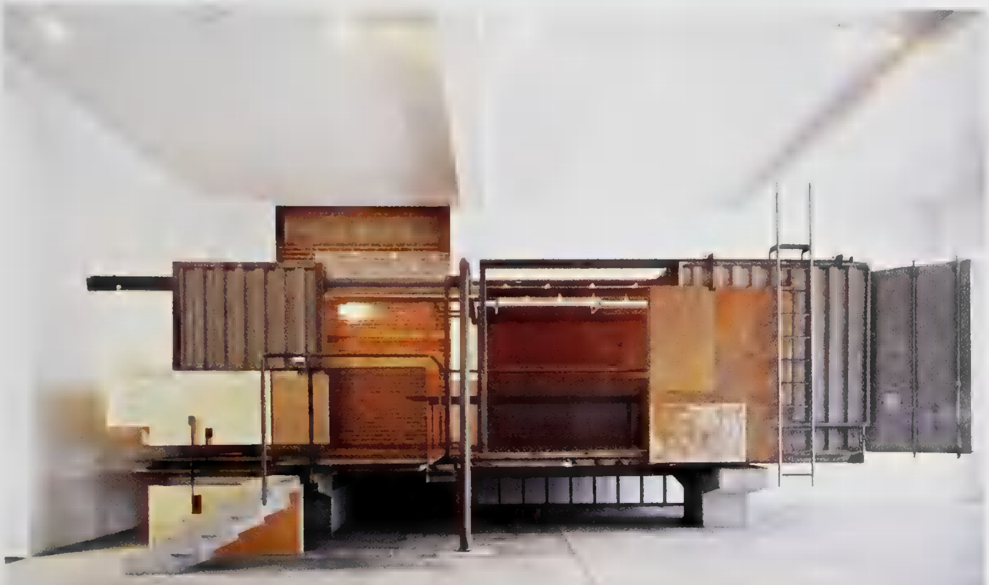


"LIKE FILMMAKING, THE STORY IS TOLD THROUGH STRONG VISUAL IMAGERY, INCLUDING A COMPELLING COLLAGE OF MATERIALS."

Reactor Films
Santa Monica, California
Architect: *Pugh + Scarpa*

This modestly sized and priced renovation of a 1930s art deco masonry building into a state-of-the-art office and work space for commercials and music-video production was completed on a fast track. A street-level conference room, inventively created from an ocean shipping container, is the defining feature of the project.



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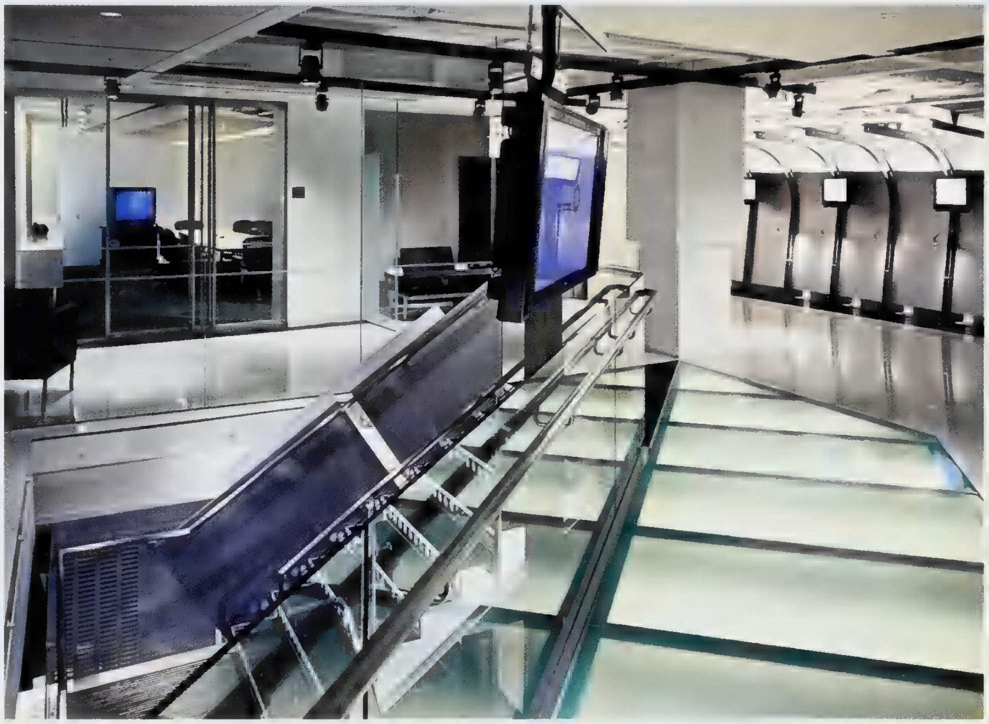
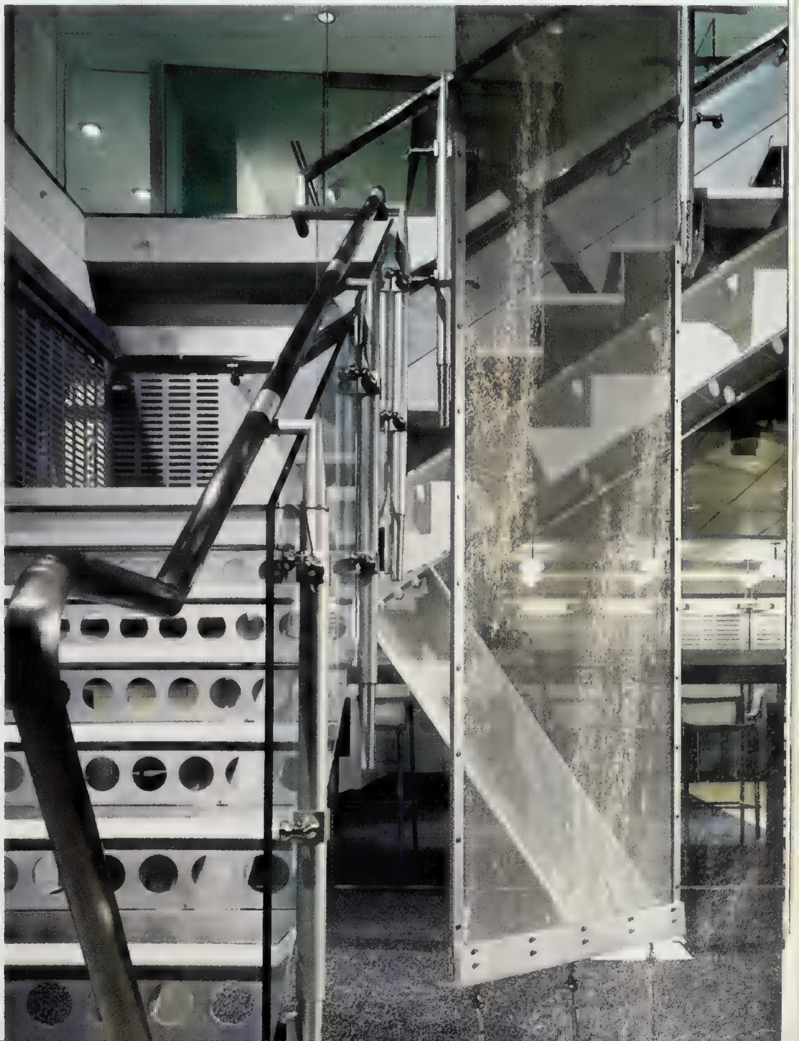
CIRCLE 101 ON INQUIRY CARD



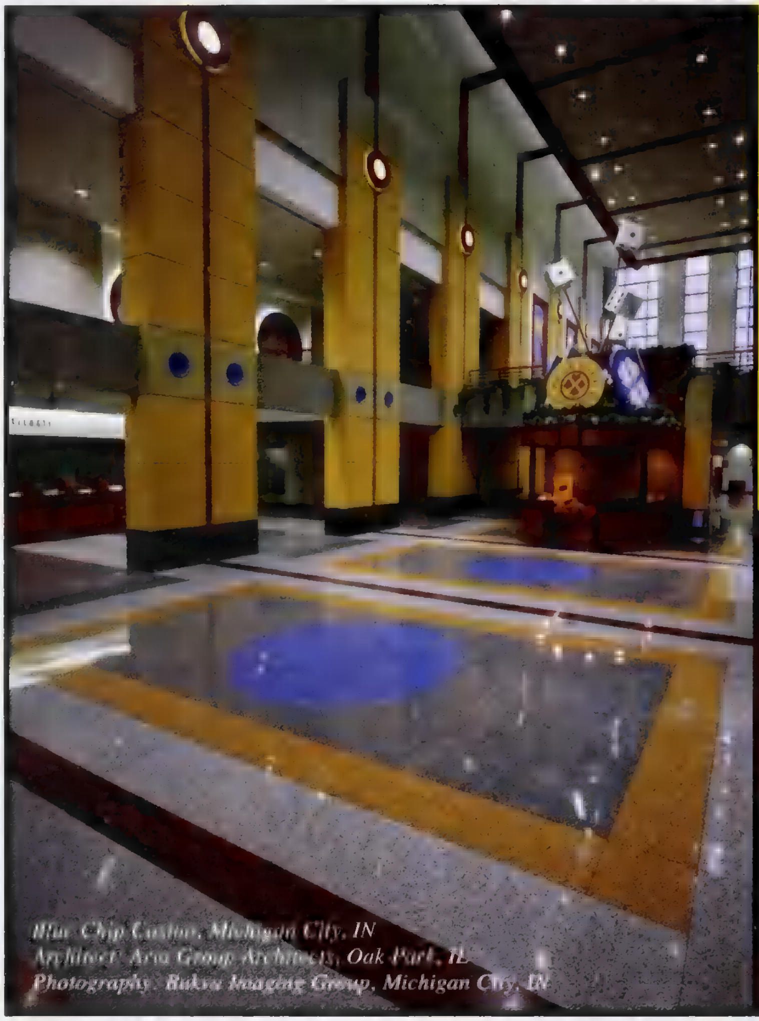
"BOTH LARGE-FLOOR-PLATE OFFICE SPACE AND SMALLER PUBLIC AREAS ARE HANDLED WITH THE SAME DESIGN ENERGY AND INTENSITY."



Lucent Technologies
Washington, D.C.
Architect: *Group Goetz Architects*

The architect worked closely with the company's president to turn this 80,000-square-foot headquarters into an intensely evocative workspace that succeeds as a strong image-maker for the high-tech company. The sophisticated and unusual use of materials, such as aluminum, steel, glass, wood, and terrazzo, creates an elegant and highly technological environment.

What other floorcovering can offer this degree of design flexibility and durability all in one?



Blue Chip Casino, Michigan City, IN
Architect: Arc Group Architects, Oak Park, IL
Photography: Bukva Imaging Group, Michigan City, IN

New York, New York Casino, Las Vegas, NV
Architect: Gaskin & Bezanski, Las Vegas, NV

Motown Cafe at New York, New York Casino, Las Vegas, NV
Architect: Haverson Architecture & Design, Greenwich, CT
Photography: Opulence Studios, Las Vegas, NV

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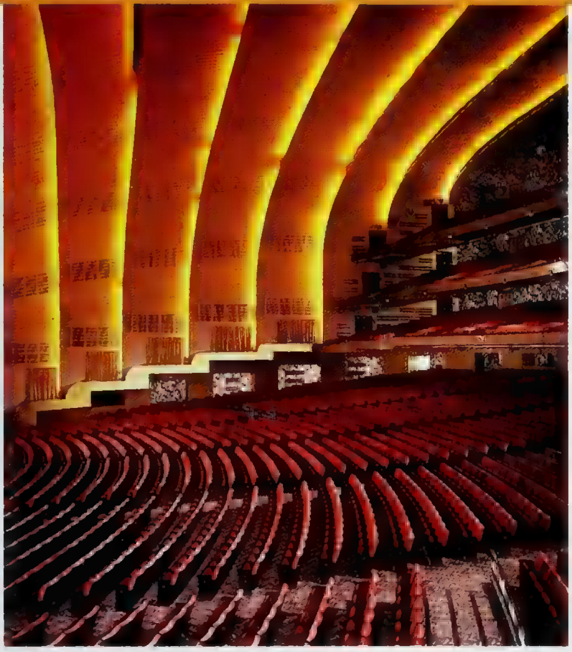
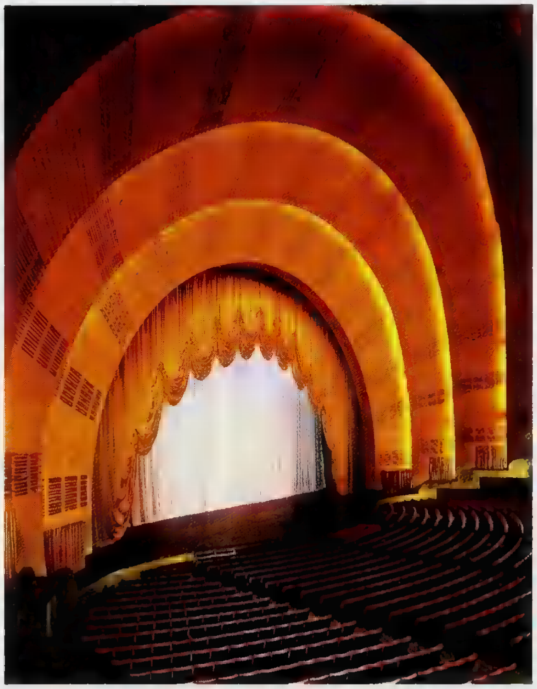
CIRCLE 102 ON INQUIRY CARD

Southwest Terrazzo Association





"REINVIGORATES AN AMERICAN ICON—
RESTORING FABRICS, FURNISHINGS,
AND MURALS THAT GLORIFY
THE DECORATIVE PERIOD
OF ENTERTAINMENT HISTORY."

Radio City Music Hall
New York City
Architect: *Hardy Holzman Pfeiffer Associates*

A major restoration returns this world-renowned performance hall to its former brilliance. Extensive archival research facilitated re-creation of the exact details of the carpets, walls, murals, art, and lighting.

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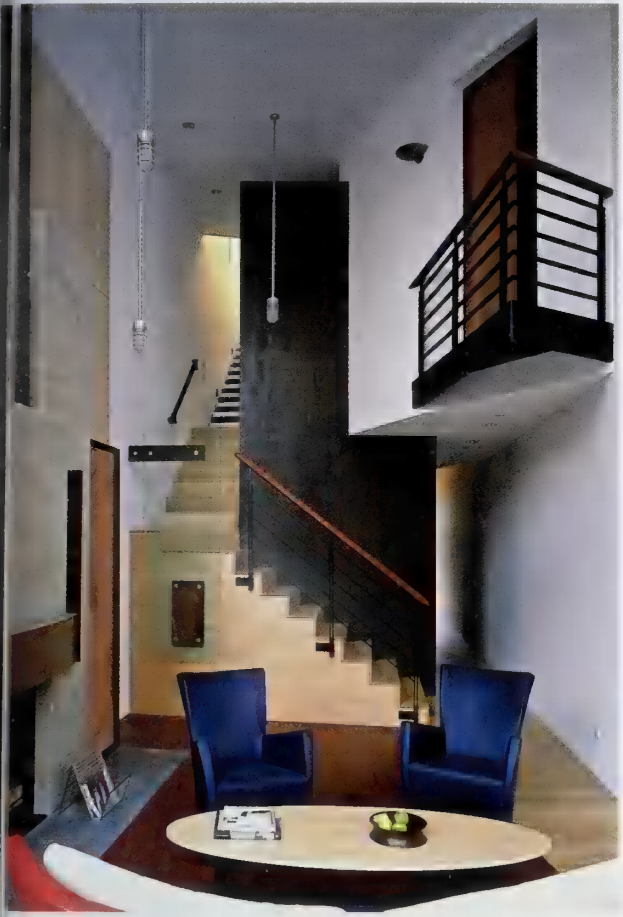
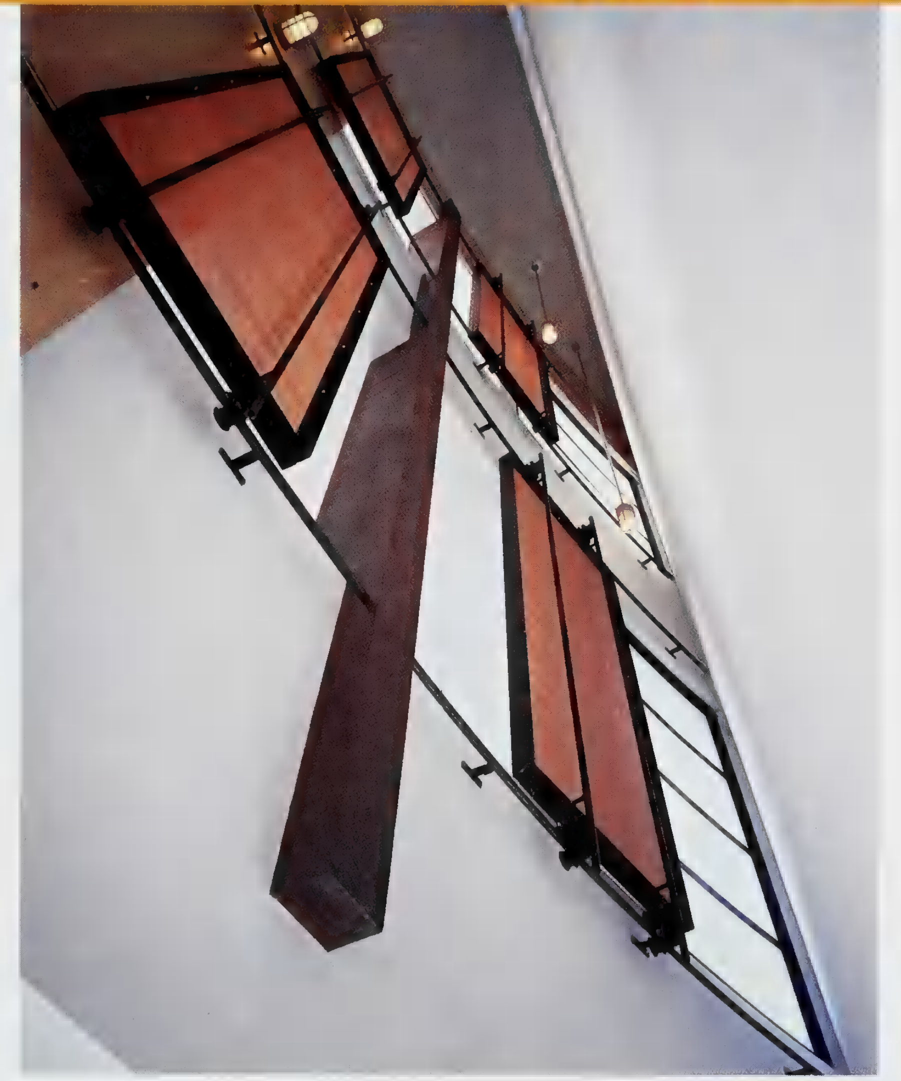
CIRCLE 103 ON INQUIRY CARD

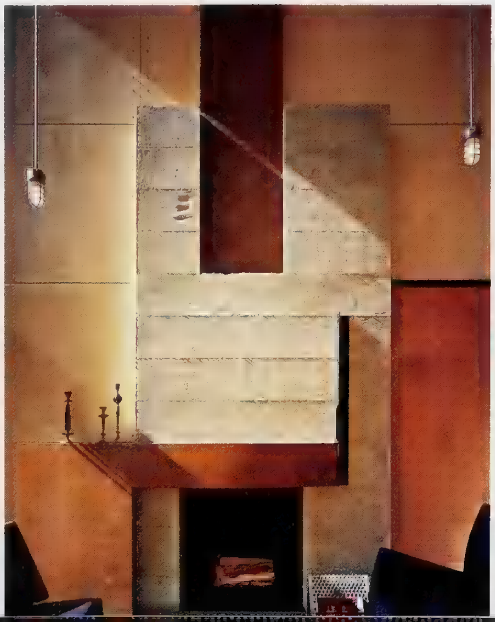


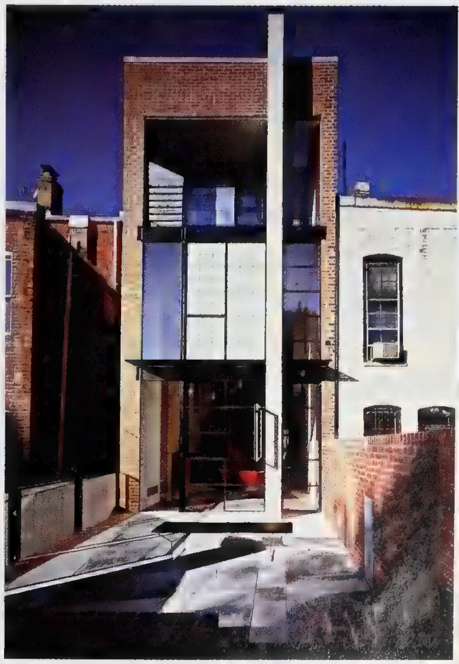


> **"CONSISTENT IN ITS INTENTION THROUGHOUT, THE PROJECT DEMONSTRATES EXCELLENCE IN DETAIL, LIGHTING, AND USE OF MATERIALS."**

Fitch/O'Rourke Residence
Washington, D.C.
Architect: *Robert M. Gurney, AIA*

This project, which involved building a new house inside an old shell, overcomes the constraints of extreme narrowness and challenging proportions. The design combines a traditional orthogonal scheme with a curving geometry and a rotation space, resulting in an arrangement that moves and changes as one progresses through the house.





PAUL WARCHOL (TOP AND BOTTOM RIGHT)

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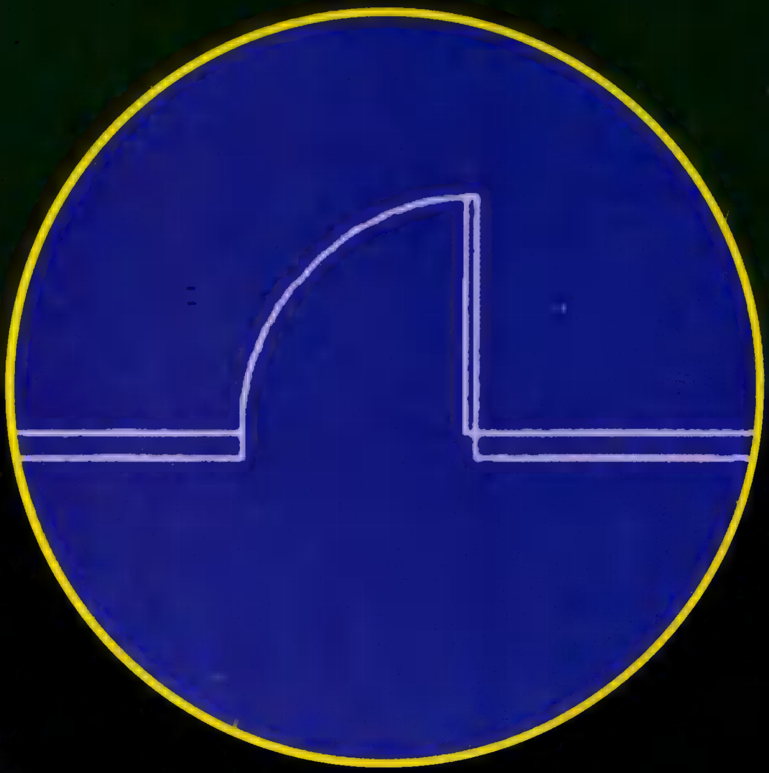

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ANSWERS

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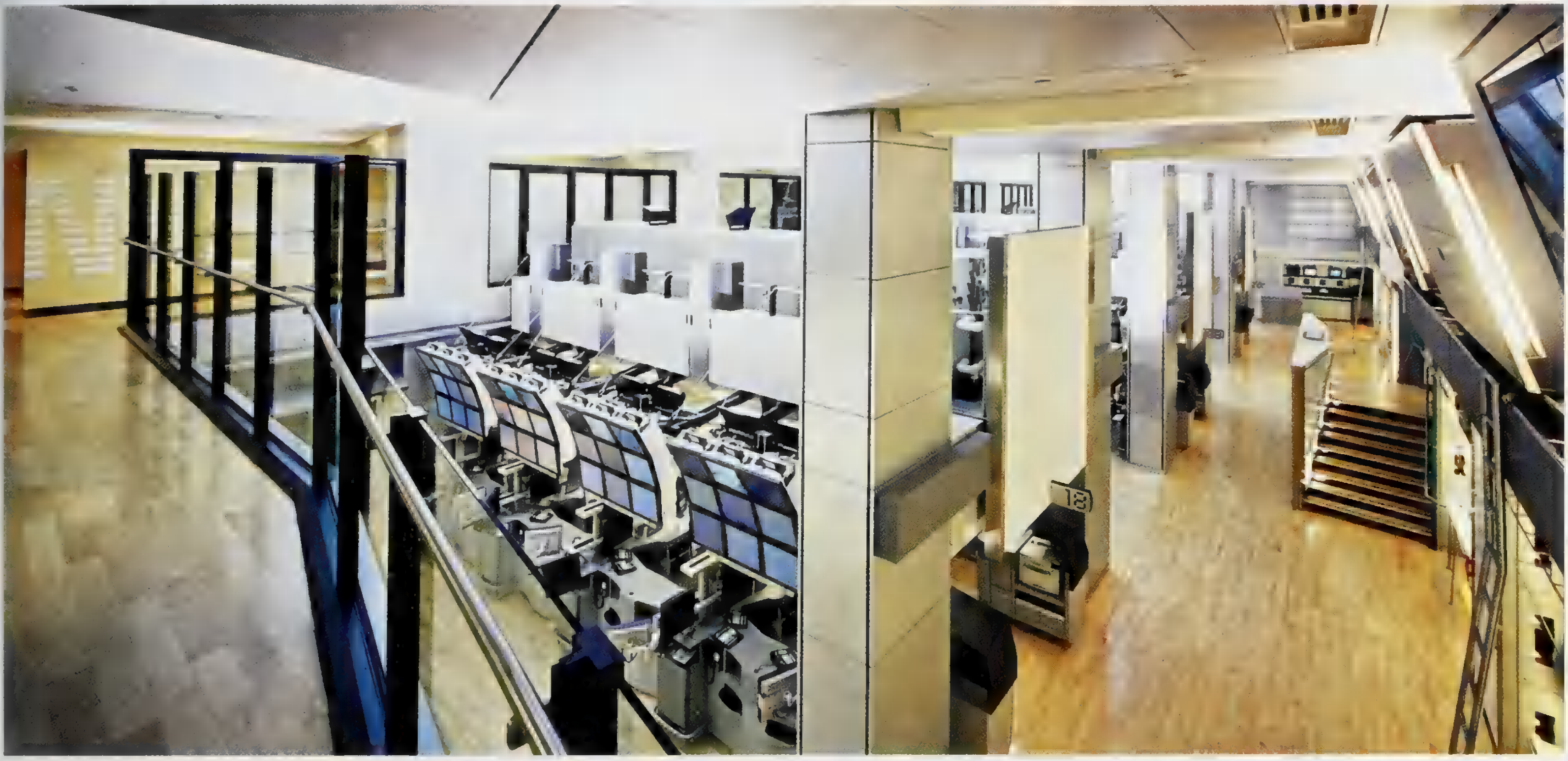
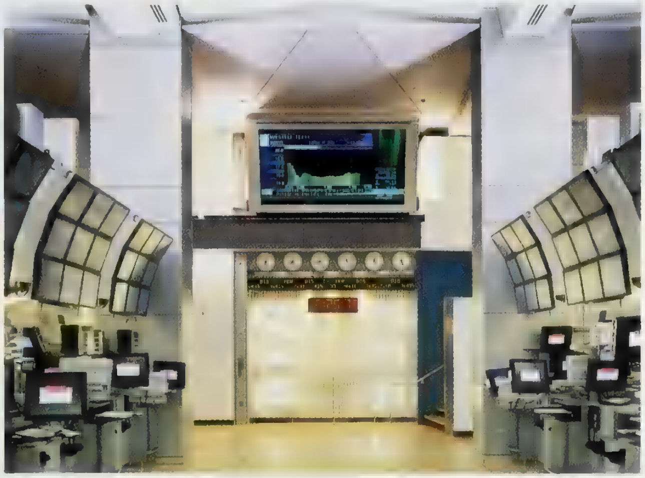
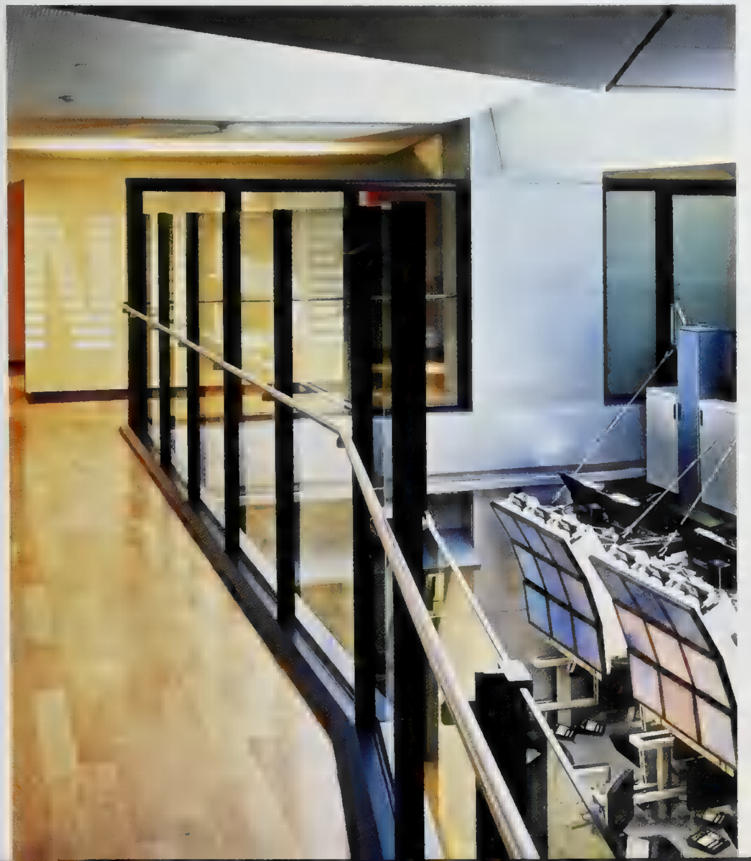


"CREATING ORDER OUT OF CHAOS WAS THE ARCHITECT'S CHALLENGE. THIS MEANT A FUSION OF ARCHITECTURE AND THE INFORMATION AGE."





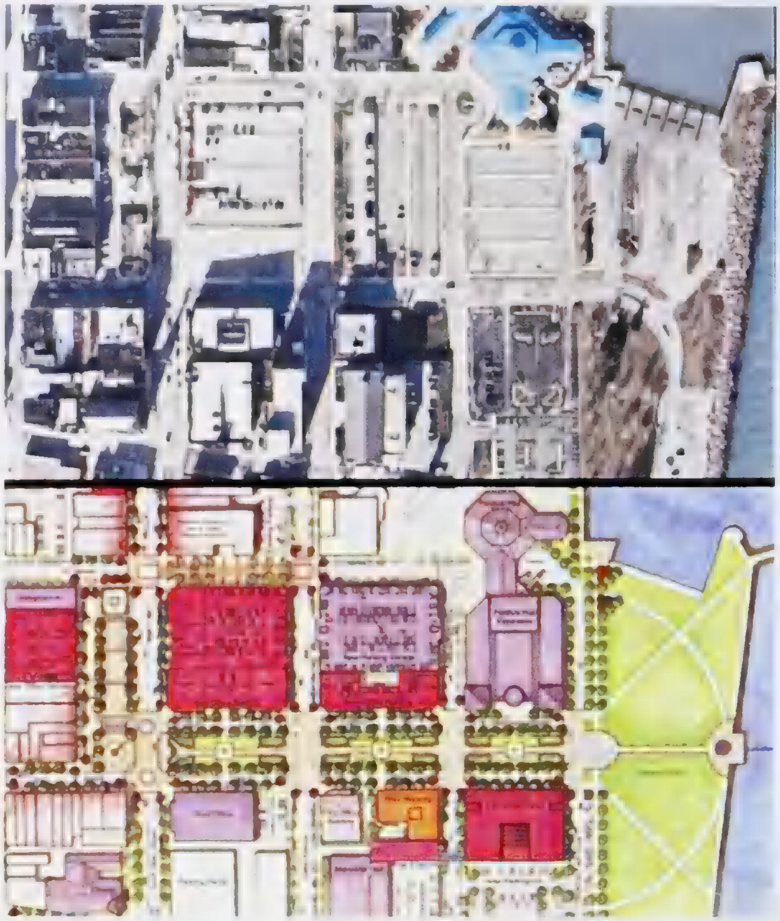
New York Stock Exchange Trading Floor Expansion
New York City
Architect: *Skidmore, Owings & Merrill, New York City; architect of record, Parsons Main of New York, Inc.*

The architect had to reinvent the trading post, based on tight ergonomic and functionality criteria road-tested by traders. The design process consisted of solving a stream of industrial-design problems. Signage and information-display methods were critical to operations and to the visual identity of the trading room.

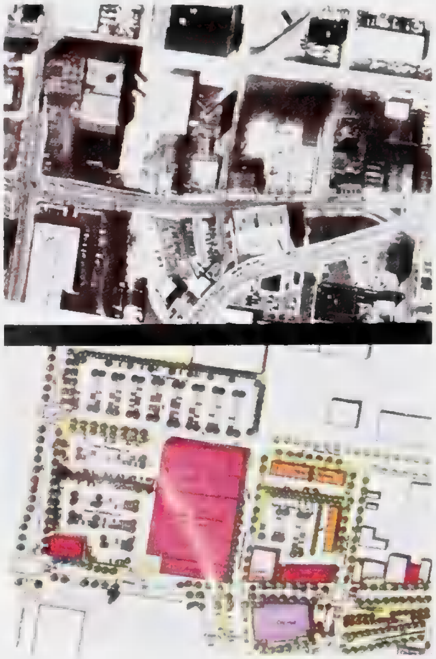
URBAN DESIGN

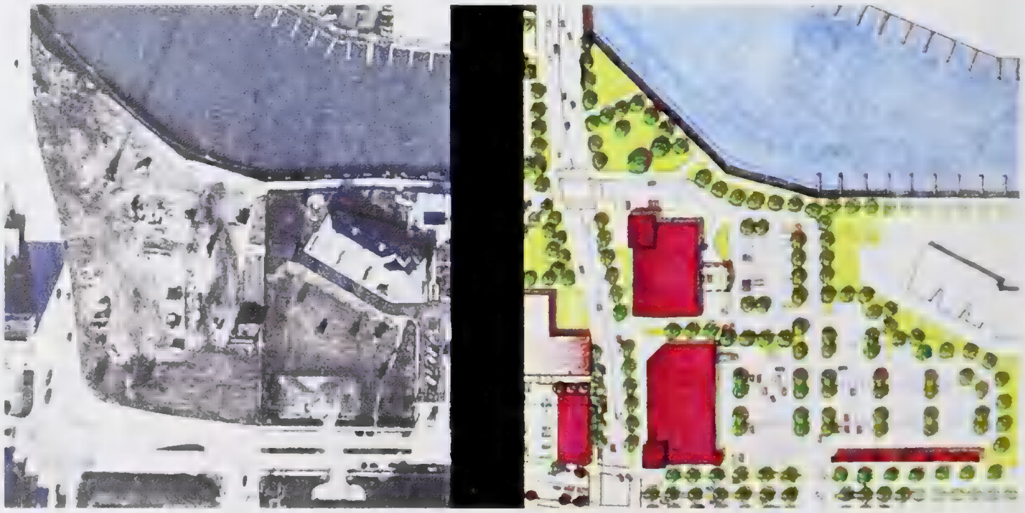
The Downtown Racine Development Plan
Racine, Wisconsin
Architect and urban designer:
Crandall Arambula PC

A very thoughtful planning process has achieved a clear, flexible, and realistic vision and has generated a high level of public confidence that will allow the plan to overcome any difficulties in the implementation. The plan incorporates the lake and river to reflect their historic and visual worth, as well as their potential for public use. Integrating residential uses into Racine's historic core will bring an important and much needed dimension back to the area. While the plan responds to the necessity of automobile access and parking, it does not compromise the pedestrian environment, which is given first priority. Community residents and business leaders rolled up their sleeves and worked hard to bring Racine back from the brink.



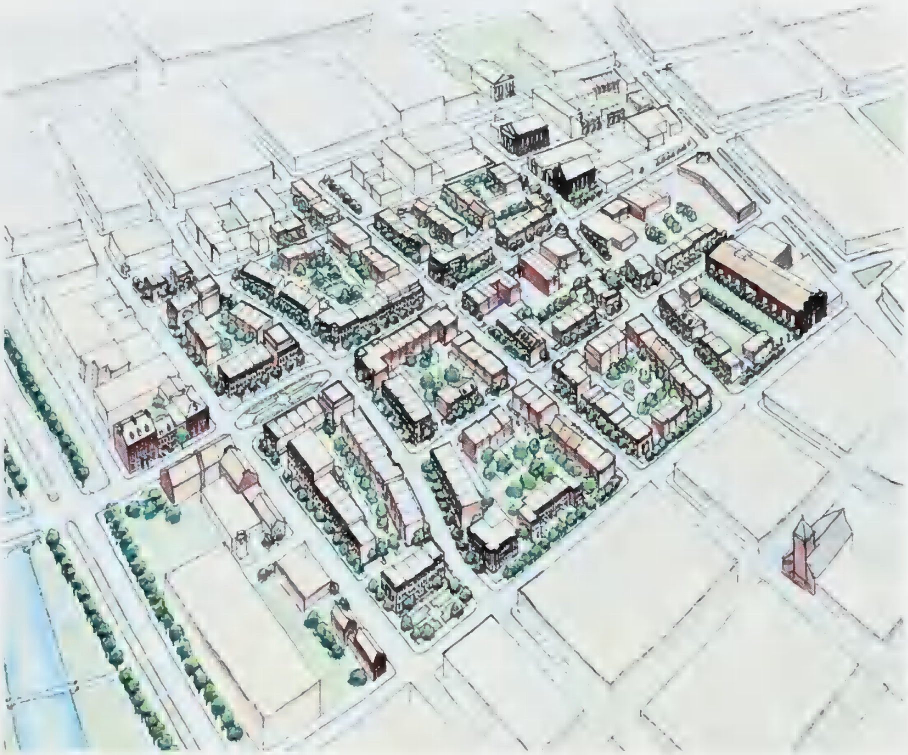
> "PRIOR TO THE PLAN, PEOPLE SAID, 'WHY NOT JUST BULLDOZE DOWNTOWN AND BE DONE WITH IT?' BUT NOW THE LOCAL GOVERNMENT, BUSINESSES, AND THE CITIZENS ENTHUSIASTICALLY ENDORSE IT."



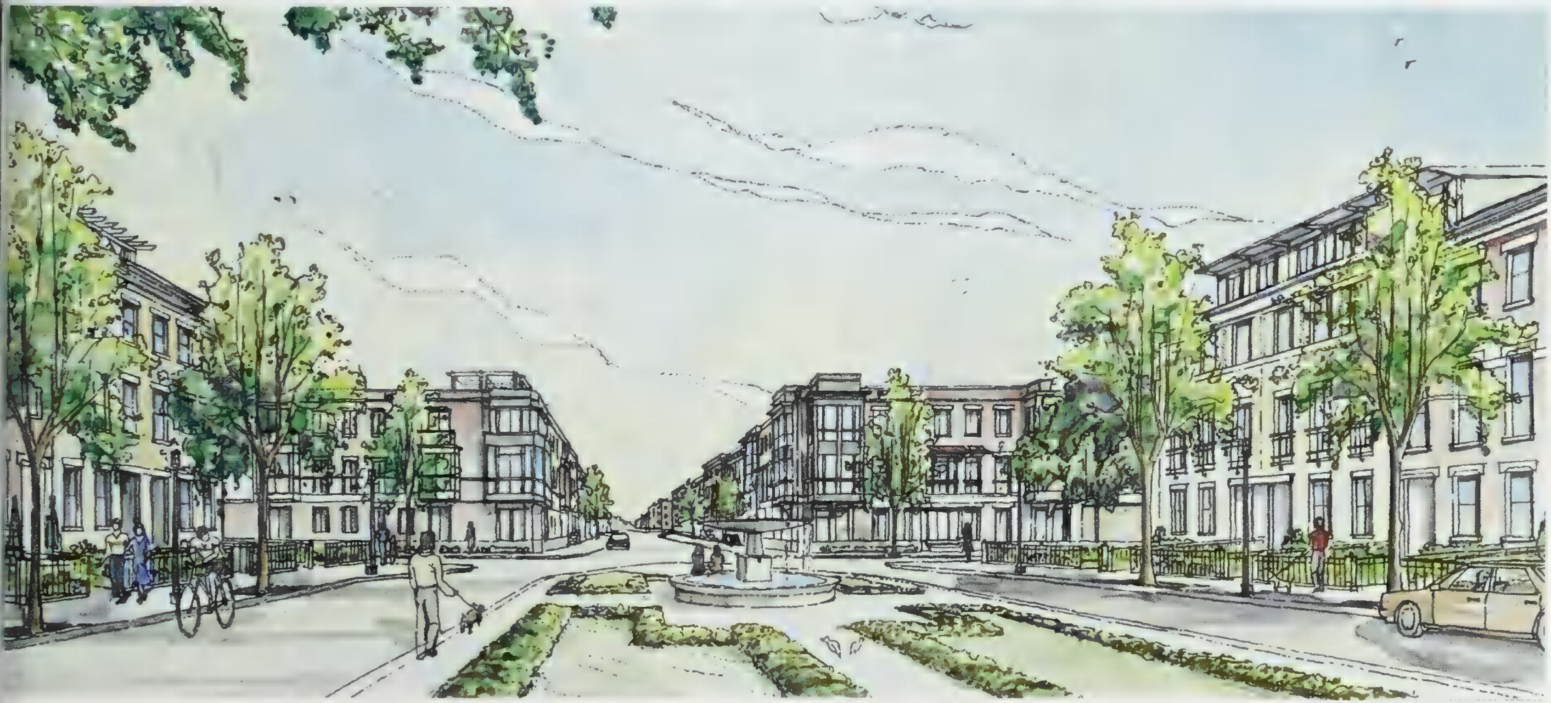


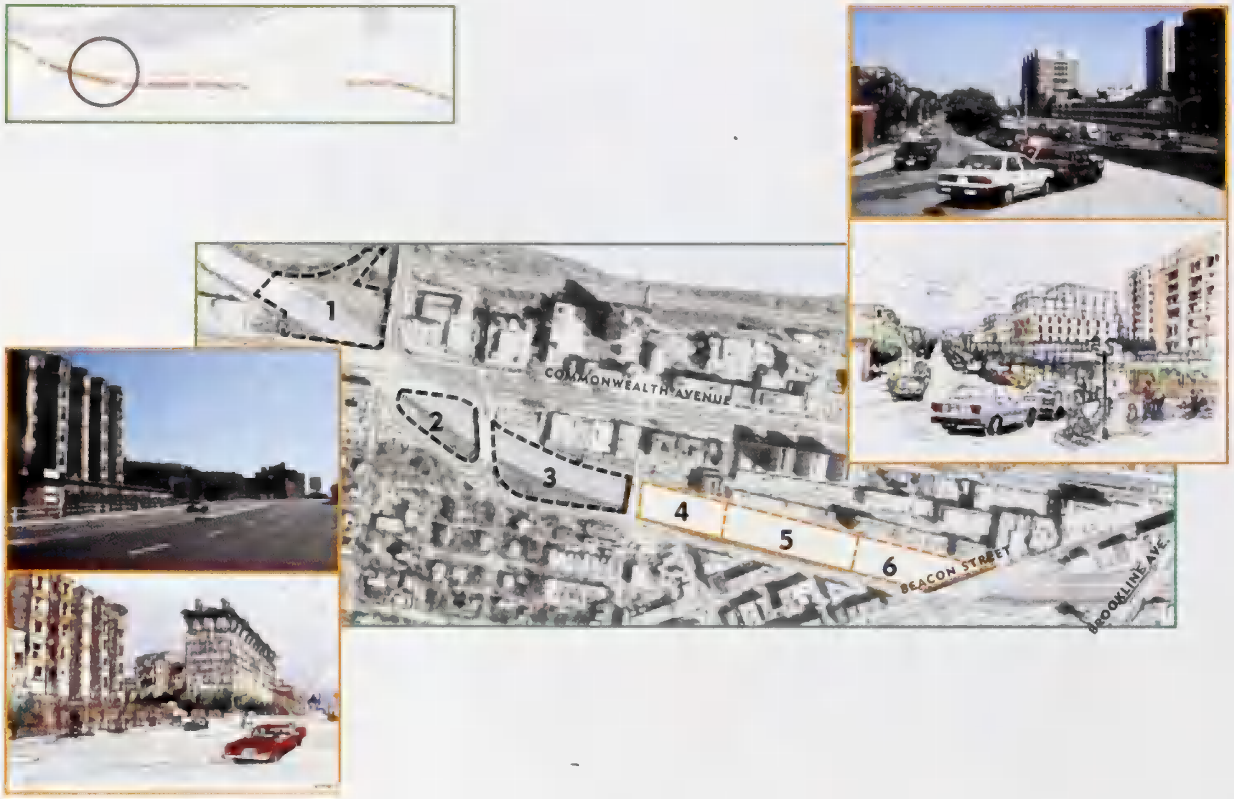
Flag House Courts Revitalization
Baltimore
Architect: *Torti Gallas and Partners • CHK, Inc.*

This plan uses the street system to give the new community a dignified identity, a human scale, and a neighborhood square that opens a vista to two landmarked buildings and connects the neighborhood to the city. The clever integration of parking into mid-block locations gives residents security and control, while reinforcing the civic character of the public spaces. The plan incorporates both existing buildings and new housing that respects Baltimore's strong tradition of rowhouses and streetscapes. The invisible integration of residents' income levels is commendable, as is the fact that 40 percent of former occupants will be returning.



"AN EXCELLENT EXAMPLE OF AN AFFORDABLE HOUSING PROJECT THAT CREATES A SENSITIVE RELATIONSHIP WITH THE SURROUNDING CONTEXT, WHILE CLEARLY ADDRESSING THE COMMUNITY'S NEEDS."

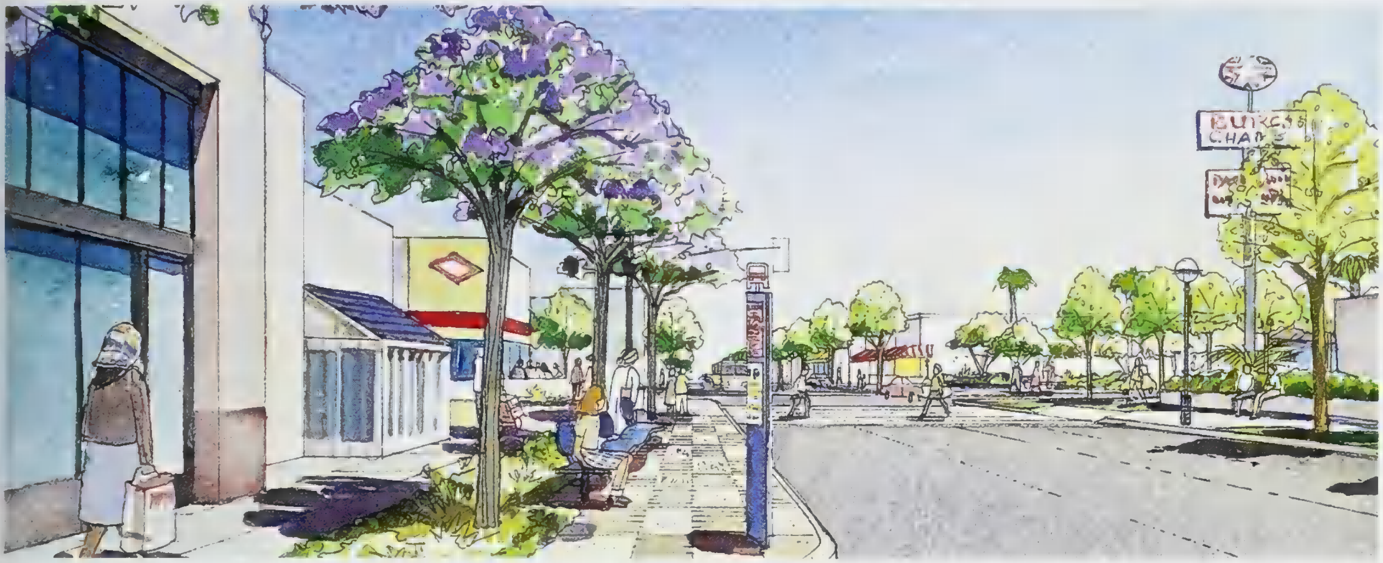


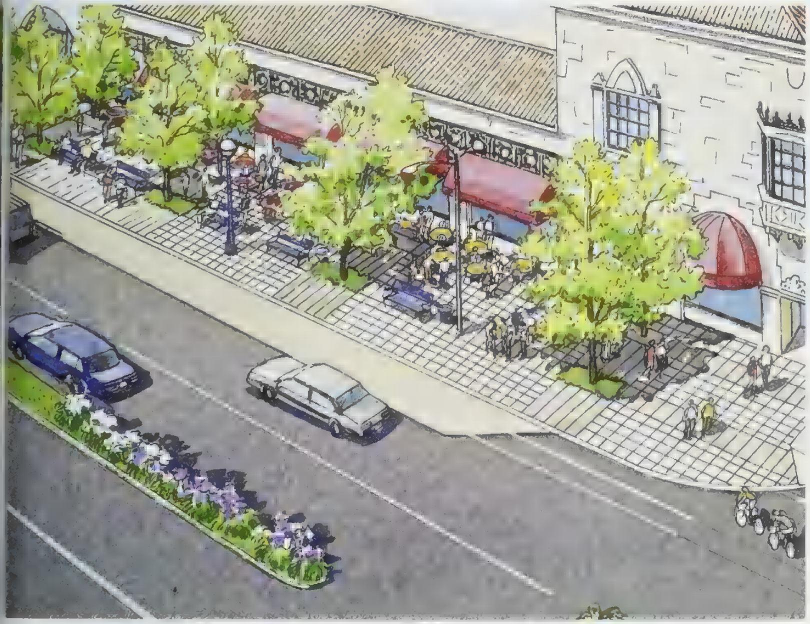


A Civic Vision for Turnpike Air Rights in Boston
Boston
Architect: *Goody, Clancy and Associates*

The design's diverse mix of commercial, retail, campus, residential, and open space reflects the priorities of a livable city. This is one of the most notable projects to heal an urban scar created by the highway construction of the 1960s.

"THIS PROACTIVE, CITIZEN-BASED DEVELOPMENT PLAN EMPOWERS THE NEIGHBORHOOD TO BE A REAL PLAYER IN THE REBUILDING PROCESS."





"THE JURY APPLAUDS THE SIMPLE AND EFFECTIVE RECOMMENDATIONS OF THE URBAN DESIGN, WHICH WILL IMPROVE THE EVERYDAY LIVES OF PEOPLE WHO LIVE AND WORK ALONG THE LENGTH OF THE HIGHWAY."

Santa Monica Boulevard Master Plan
West Hollywood, California
Architect: *Zimmer Gunsul Frasca Partnership; landscape architect, Patricia Smith, ASLA, AICP*

This project reclaims a state highway (Route 66!) by placing it under local control and developing its entire length as an important civic amenity, including bus-stop gardens, public art, reintegration of landscape, and a new focus on pedestrians. The urban design respects the adjoining neighborhoods by adjusting the street's character accordingly as it moves through neighborhood zones. This is a prototypical corridor project—a wonderful model for other cities. The jury hopes that other communities will feel emboldened by its success and will be inspired to "take back their streets" too. The procedure underlying the urban design was very well communicated and indicative of very good public process.

25-YEAR AWARD

Nature joins art and business in this enduring corporate campus

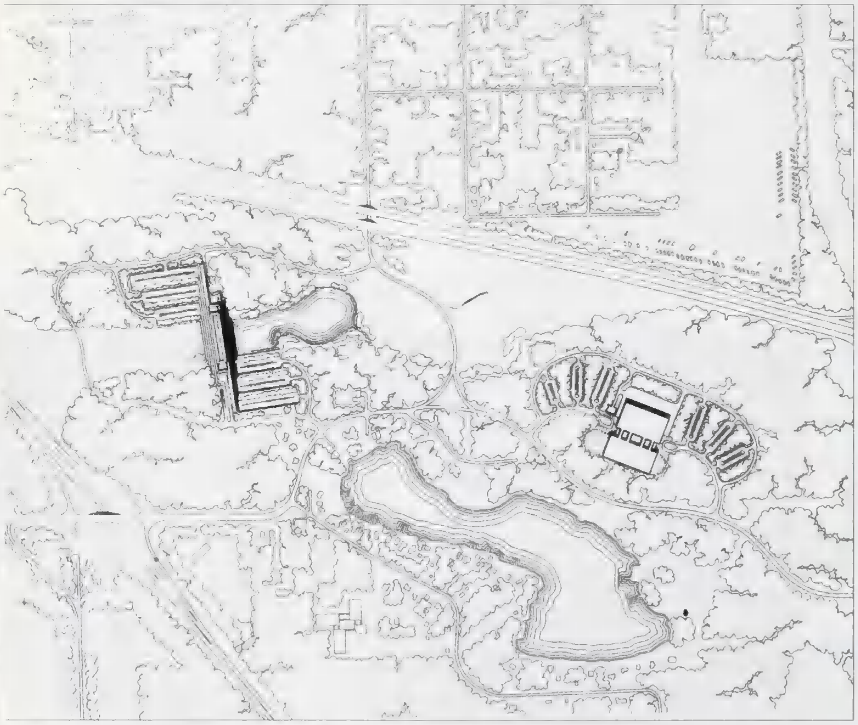
The Weyerhaeuser headquarters is a milestone project in two respects. First, it is perhaps the most famous and one of the earliest examples of a large corporate headquarters complex that has been integrated with the existing natural landscape by the skillful work of landscape architect Peter Walker. Equally noteworthy, the interior "landscape," which helped generate the design, is an ambitious effort to create a totally partition-free interior. Designed by the San Francisco office of Skidmore, Owings and Merrill LLP (SOM) in collaboration with Knoll International and Rodgers Associates, it was the first major open-space office plan in this country. Together, the exterior and interior landscapes give the Weyerhaeuser headquarters lasting architectural value.

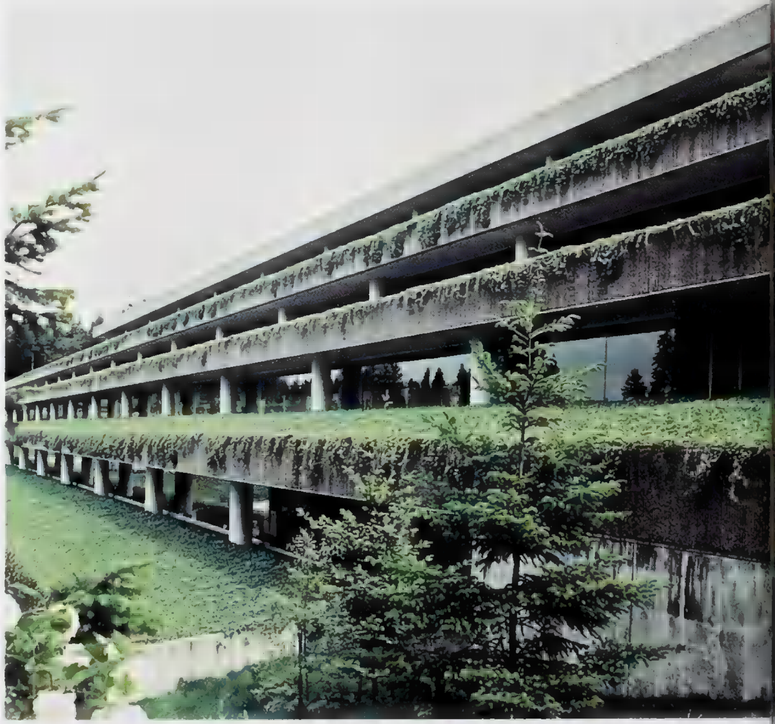
The building's pristine condition clearly shows the love and care of its owners and occupants. The design has withstood the test of time beautifully, and the original elements are as effective now as when they were first built and planted.

It's a very simple statement—a number of terraced floors planted with ivy, linking the world of nature to the world of man. This building by a lake is a modern landscape of such potency that the building seems to emerge from the earth. It has a spirit of its own, an inevitability.

The building has been influential since its completion, referred to in the literature of the corporate workplace as a landmark in environmental sensitivity and innovation. The bold design demonstrates the effectiveness of a cleanly honed idea, well-executed. This timeless, clear, professional solution to the office building type continues to have lasting value in the present.

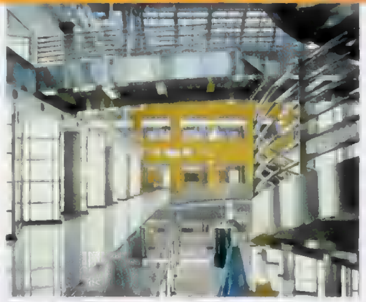
Located in Tacoma, this five-story, 358,000-square-foot headquarters for Weyerhaeuser, a natural resources company, is set in a 230-acre wooded campus planned and designed by SOM's Edward Charles Bassett as lead designer and landscape architect Peter Walker.



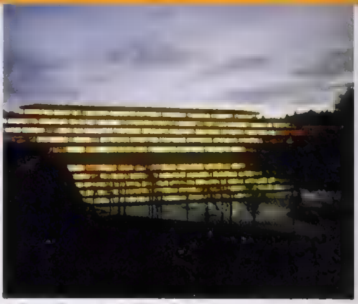


"THE ARCHITECT WANTED TO FIND A POINT WHERE THE LANDSCAPE AND THE BUILDING WERE SO MUTUALLY DEPENDENT THAT THEY COULD NOT SURVIVE ALONE."

McCormick Place South Bldg., page 101


Jin Mao Tower, page 129

Santa Monica Blvd., page 145


Weyerhaeuser Headquarters, page 146

Meredith Corporation, page 152

Museum of the Shenandoah Valley, page 177

Winners & Jurors

WINNERS

Architecture *(page 98)*
Conference Barn, Sant Architects, Inc.; University of Pennsylvania Modular VII Chiller Plant, Leers Weinzapfel Associates; McCormick Place South Building, Thompson, Ventulett, Stainback & Associates, with associate architect/architect of record A. Epstein and Sons International; Reliance Building/Hotel Burnham, Antunovich Associates, with associate architect McClier; College Conservatory of Music, University of Cincinnati, Pei Cobb Freed & Partners Architects LLP, with associate architect/architect of record NBBJ-Roth; Rifkind Residence, Tod Williams Billie Tsien and Associates; Hyde Park Branch Library, Schwartz/Silver Architects; Eleventh Avenue Townhomes, Studio E Architects; The Condé Nast Building, Fox & Fowle Architects; Williams Natatorium at Cranbrook Educational Community, Tod Williams Billie Tsien and Associates; Queens Borough Public Library, Flushing Branch, Polshek Partnership; Downtown Homeless Drop-in Center, Michael B Lehrer, AIA/ Lehrer Architects, and Farooq Ameen, AIA/Farooq Ameen and Associates; The New York Times Printing Plant, Polshek Partnership, with architect of record Parsons Main of New York; Benaroya Hall, LMN Architects

Interiors *(page 122)*
Detroit Opera House, The Albert Kahn Collaborative, Inc., with programming and preliminary design by JPRA Architects; SoHo Loft, Architecture Research Office; Herman Miller National Showroom, Krueck and Sexton Architects; Alliance Française de Chicago, DeStefano and Partners; Higgins Hall, Pratt Institute School of Architecture, Rogers Marvel Architects PLLC, and preservation architect Ehrenkrantz and Eckstut Architects; Jin Mao Tower, Skidmore, Owings & Merrill LLP, Chicago; Jacobs Residence Subterranean, Patrick J. Tighe, AIA; Reactor Films, Pugh + Scarpa; Lucent Technologies, Group Goetz Architects; Radio City Music Hall, Hardy Holzman Pfeiffer Associates; Fitch/O'Rourke Residence, Robert M. Gurney, AIA; New York Stock Exchange Trading Floor Expansion, Skidmore, Owings & Merrill LLP, New York City, with architect of record Parsons Main of New York

Urban Design *(page 142)*
The Downtown Racine Development Plan, Crandall Arambula PC; Flag House Courts Revitalization, Torti Gallas and Partners ▪ CHK, Inc.; A Civic Vision for Turnpike Air Rights in Boston, Goody, Clancy and Associates; Santa Monica Boulevard Master Plan, Zimmer Gunsul Frasca Partnership, and landscape architect Patricia Smith, ASLA, AICP

25-Year Award *(page 146)*
Weyerhaeuser headquarters Skidmore, Owings & Merrill LLP, San Francisco

Firm Award *(page 150)*
Herbert Lewis Kruse Blunck Architecture

Gold Medal *(page 164)*
Michael Graves, FAIA

JURORS

Architecture
John Belle, FAIA (chair), New York City; Lo-Yi Chan, FAIA, Ashley Falls, Mass.; Ginelle Desrochers, AIA Rep., College Park, Md.; Sheila A. Dial, Assoc. AIA, Nashville; Mark W. Rios, FAIA, Los Angeles; Rebecca Swanston, AIA, Baltimore; Kit Tuveson, Hewlitt/Packard, Palo Alto, Calif.; Edward Weinstein, FAIA, Seattle; Carol A. Wilson, AIA, Portland, Maine

Interiors
Barbara Hillier, AIA (Chair), New Hope, Penn.; Mattias Z. Bergman, Sunmicro Systems, Palo Alto, Calif.; Randy Brown, AIA, Omaha; Victor A Saroki, FAIA, Detroit; John Vinci, FAIA, Chicago

Regional and Urban Design
Amy Weinstein, FAIA (chair), Washington, D.C.; Thomas E. Lollini, FAIA, Berkeley; Weiming Lu, Hon. AIA, Lower Town Redevelopment Corporation, St. Paul, Minn.; Elizabeth Seward Padjen, FAIA, Marblehead, Mass.; Stephen Vogel, FAIA, Detroit

Magellan Health Services Building, Columbia, Maryland

Designed by Douglas N. Carter, AIA, NCARB – Davis, Carter, Scott, Ltd.
Winner of ACI's 1999 Excellence in Concrete Award

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City Administration Building , New Brunswick, New Jersey

Designed by Edward Rothe, FAIA – Rothe-Johnson-Fantacone
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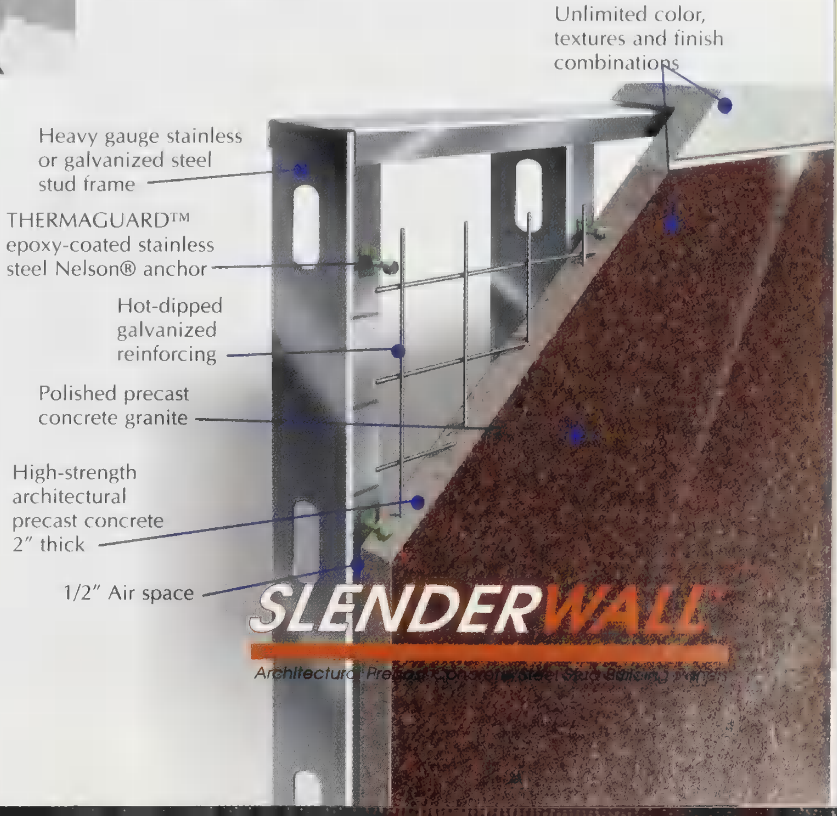
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CIRCLE 105 ON INQUIRY CARD

HERBERT LEWIS KRUSE BLUNCK ARCHITECTURE named Firm of the Year

for four decades of superb work in the Midwest and beyond

By Deborah Snoonian, P.E.

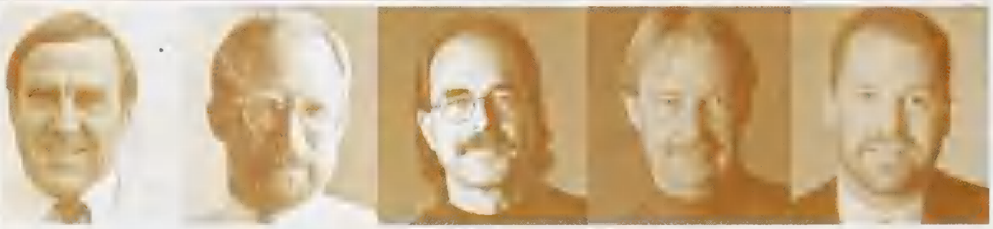
Charles "Chick" Herbert, FAIA, once made a deal with his father-in-law. He would spend two years in the family business as a beer distributor, but if he didn't fall in love with the job, he'd go back to his old line of work. When his two years were up, he thanked his father-in-law and promptly returned to his true passion, architecture—a decision that has enriched both the profession and the state of Iowa ever since. The Des Moines firm Chick founded in 1961—then Charles Herbert and Associates, now Herbert Lewis Kruse Blunck Architecture—garnered the 2001 AIA Firm Award, cementing its reputation as a world-class design firm and a paragon of architectural practice. This firm has spent 40 years designing a diverse array of private and public works mostly on Iowa's fertile soil. That's right, Iowa, a landlocked state that is terra incognita to most architects. Yet the impact of HLKB's work has reverberated throughout the region and beyond.

A commitment to excellence and education

So how does a Midwest firm with only 38 employees manage to turn out high-quality designs so consistently? The principals believe their deeply held philosophy gives them the edge: a commitment to design excellence carried out by emphasizing client service, team decision making, and aesthetics. The firm's founder, who retired a year and a half ago, was the visionary. "Chick

Below: *The staff of Herbert Lewis Kruse Blunck Architecture in a 1999 photograph in Des Moines.*

Bottom: *The firm's principals, from left to right: Charles "Chick" Herbert, FAIA (retired); Calvin F. Lewis, FAIA; Rod Kruse, FAIA; Kirk V. Blunck, FAIA; and Paul D. Mankins, AIA.*



IF YOU BUILD IT, THEY WILL COME

Iowa is perhaps best known as the setting for *Field of Dreams,* the 1989 film starring Kevin Costner in which a farmer hacks away his cornfield to build a baseball diamond. But the myth of the Midwest as a mere expanse of agrarian landscape and simple farm communities dies under the lens; those who know the territory describe it as a land of enlightened pragmatism. Iowa quietly enjoys a first-rate educational system: Student test scores and literacy rates have been at or near the nation's high point for two decades. And few are aware that Des Moines has been a proving ground for work by architects such as Saarinen, Pei, and Meier. More than any other firm, HLKB's work has amplified the status of architecture in the state and the region. Lewis says, "When we won the firm award, we received many gracious responses from other Midwest firms, thanking us for representing them. We're lucky to be recognized, but our peers are also working very hard to do intelligent, inspirational architecture out here." In a perfect world, we would all have—and be—such good neighbors. *DS* believed that every decision made on a project is an opportunity to enrich the design," says Rod Kruse, FAIA, who joined the firm with Kirk V. Blunck, FAIA, in 1987. The strength of the firm's projects can be gauged not only by their elegance but on how well they serve their clients' needs, and how clearly their architectural ideas are expressed in concept and detail—from site orientation and materials to hardware.

Calvin F. Lewis, FAIA, who joined the firm in 1970, credits Chick for his humility and tenacious beliefs about how firms should operate. "Chick has tremendous skills as an architect, yet he used his talent to build a firm rather than promote his own name," he says. Their studio is renowned for its teaching culture, in which mentoring is favored over watch-and-copy. Each project begins by establishing an architectural idea—a framework used to guide all decisions on the project. Ideas are conceived by teams comprising seasoned architects and interns; the winning idea survives based on merit and consensus, not the approval of veteran staffers. Informal crits help teams make refinements, so the results are a distillation of the experience of all the architects involved. Lewis recalled that Chick never voiced his opinion about a project during crits; instead, he'd ask what inspired the choices the architects made. "We called his methodology 'planting the seed of doubt,' because his questions were always pertinent and made us come to grips with the challenges of designing, which allowed us to develop solutions on our own. It wasn't typical of how other firms did things. But it worked extremely well."

An architecture of substance

In an increasingly style-driven profession, HLKB resists imposing a signature aesthetic on its work, striving instead for a consistently high level of design quality. This practice certainly hasn't backfired; in 1996, for instance, six of the nine winners of AIA Iowa Chapter awards were designs by HLKB. Aaron Betsky, curator of architecture for the San Francisco Museum of Modern Art and a juror that year, recalls, "The jury was impressed by the variety of scales and architectural strategies in the winning projects, and it surprised us to learn that so many came from the same firm."

What's obvious when looking at HLKB's work as a whole is the firm's singular skill in creating an architecture of substance, with an understated strength of concept and execution. The projects manage to be modern and urbane without making the dubious leap to fashionable or flashy. No project is too small or mundane. "In their hands, [even] a neglected parking structure becomes an inspiring experience," says Steven Holl, AIA (see page 160 for an example of a parking facility). This ability to elevate the modest into something special is especially significant for a firm that practices in a place like Iowa, where frankly, people don't expect to find great architecture.

Think globally, work locally

Despite HLKB's national reputation—its projects have won over 160 national and regional awards—a full 90 percent of its work is built in Iowa. And its track record of winning repeat work is exceptional for a firm of its size. Eight clients have been with them for 10 years or more, and of those, four—the University of Iowa, Iowa State University (where Lewis chairs the department of architecture), the City of Des Moines, and Wells Fargo—have each worked with them for over 30 years.

These figures speak profoundly to the firm's allegiance to its fellow citizens, to say nothing of the faithfulness of its clients. In taking on more projects outside Iowa's borders, the firm has considered expanding but is reluctant to disrupt the team-oriented practice for the mere sake of growth. And unlike many local firms, they are true denizens of their backyard: the principals have long been active in city affairs, serving on advisory panels, juries, and boards of artistic organizations in Des Moines. "This firm has had a 40-year commitment to this city, and we think it's important that we continue to contribute to its vitality," says Blunck.

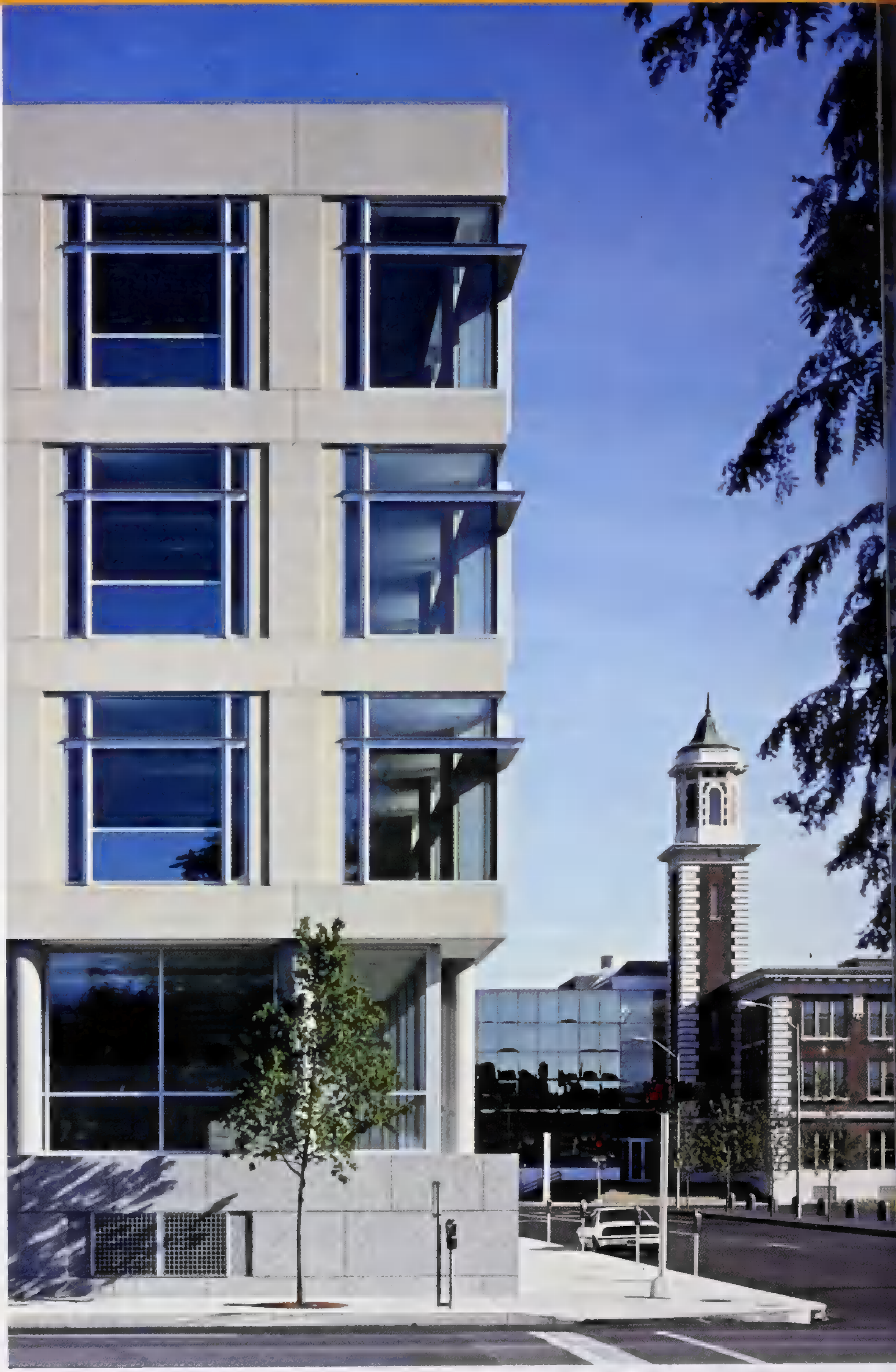
HLKB's dedication to quality architecture in an enlightened heartland is a reminder that a commitment to regional excellence can inspire those beyond its borders. That a modest-size Iowa firm won this year's highest honor may have come as a surprise to some. But to those who know HLKB's work, it's a well-deserved nod to the firm's exceptional contribution to the art, science, and craft of the profession. ■

CLIENTS ON HLKB: "DES MOINES IS DOTTED WITH THEIR GENIUS"

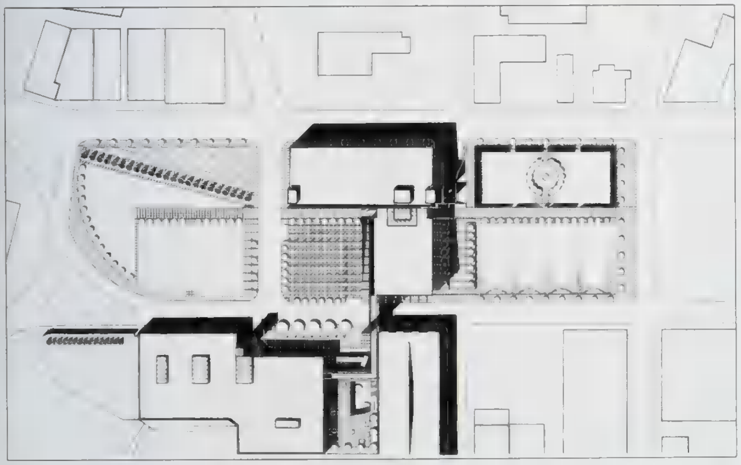
HLKB's clients have been as generous with their praise as their peers have. As Robert Sturgeon, the owner of Barr-Nunn, an Iowa trucking company whose offices were redesigned by the firm, puts it, "In our new offices I think different, I dress different, I come to work different now. The building completely changed my life." Michael G. Gartner, chairman of the Greater Des Moines Baseball Company, enlisted HLKB to renovate his home and his former workplace (the newsroom of the *Des Moines Register,* where he was once editor). Most touchingly, when juvenile diabetes claimed Gartner's 17-year-old son in 1994, Cal Lewis—who had been the boy's soccer coach years earlier—designed a soaring greenhouse in his memory on the campus of Orchard Place, a Des Moines school for troubled children. "The firm has given me the most wonderful places to live, to work, to remember," Gartner says. "And best of all, it's never their project when it's done—it's your hopes and dreams, made far more practical and beautiful than you could have ever imagined." *DS*

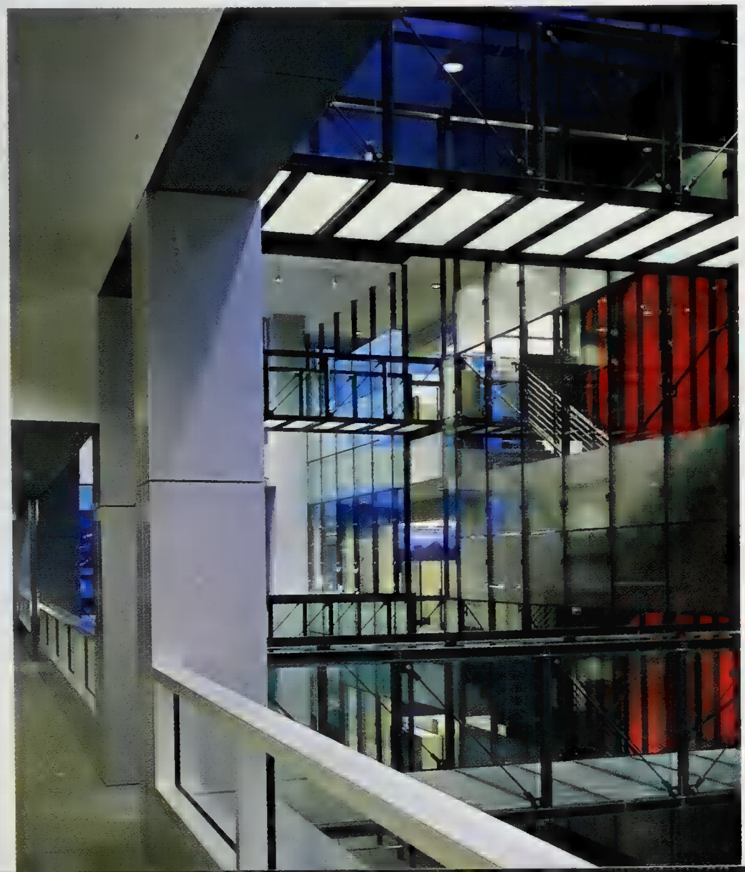
Meredith Corporation
Des Moines, 1998

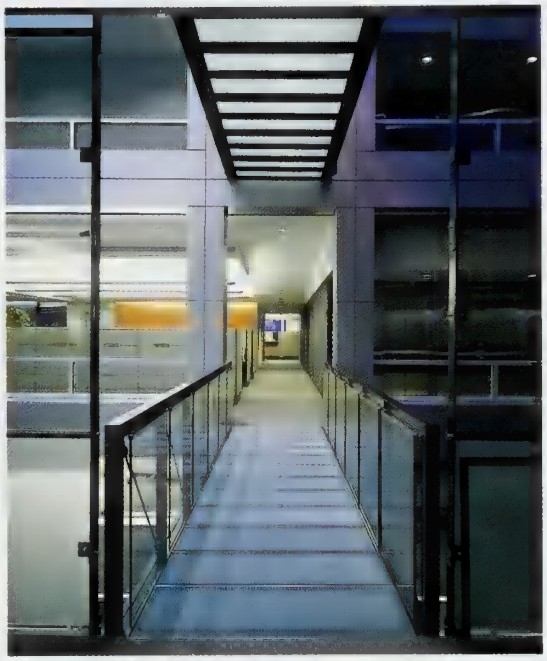
The architects expanded and designed interior spaces for the corporate headquarters of this publishing company. The site (opposite, left center) is located at a critical nexus of three major arterial streets in Des Moines, and the building extends and marks the promenade of "Gateway Green," a six-block linear park proposed to promote new development in downtown Des Moines. Daylighting strategies, such as clerestory windows and skylights (opposite, top left), along with indirect lighting equipped with sensors, provide a consistent level of ambient illumination. Inside, circulation pathways are marked by bold colors (opposite, bottom left). An open-string stairway (opposite, below right) is expressed strongly with stainless-steel railings and fasteners, painted steel plate, and granite treads.

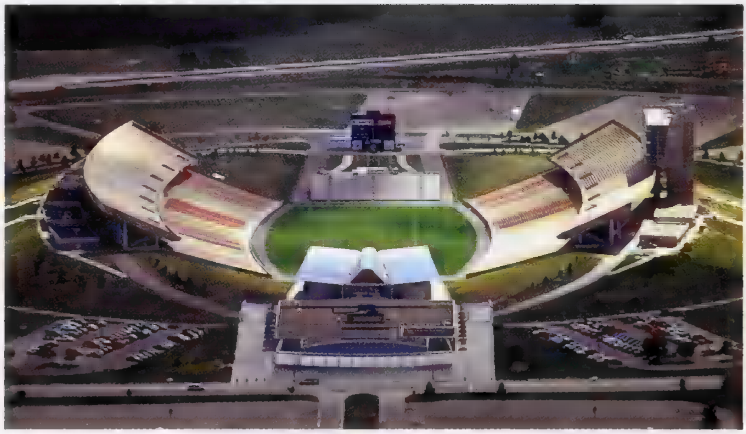


"THE LION'S SHARE OF OUR WORK IS WITH LONG-TERM CLIENTS, AND WE'VE BEEN LUCKY TO HAVE WONDERFUL RELATIONSHIPS WITH THEM."



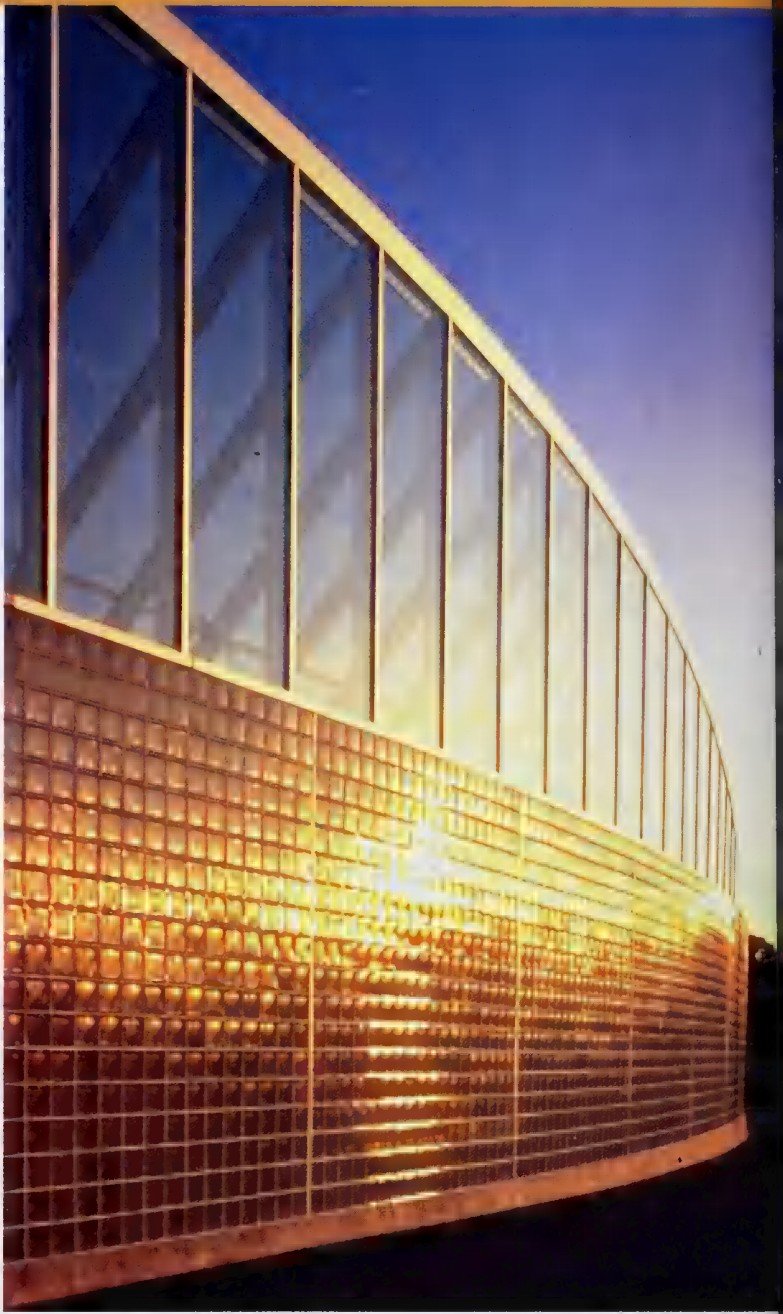


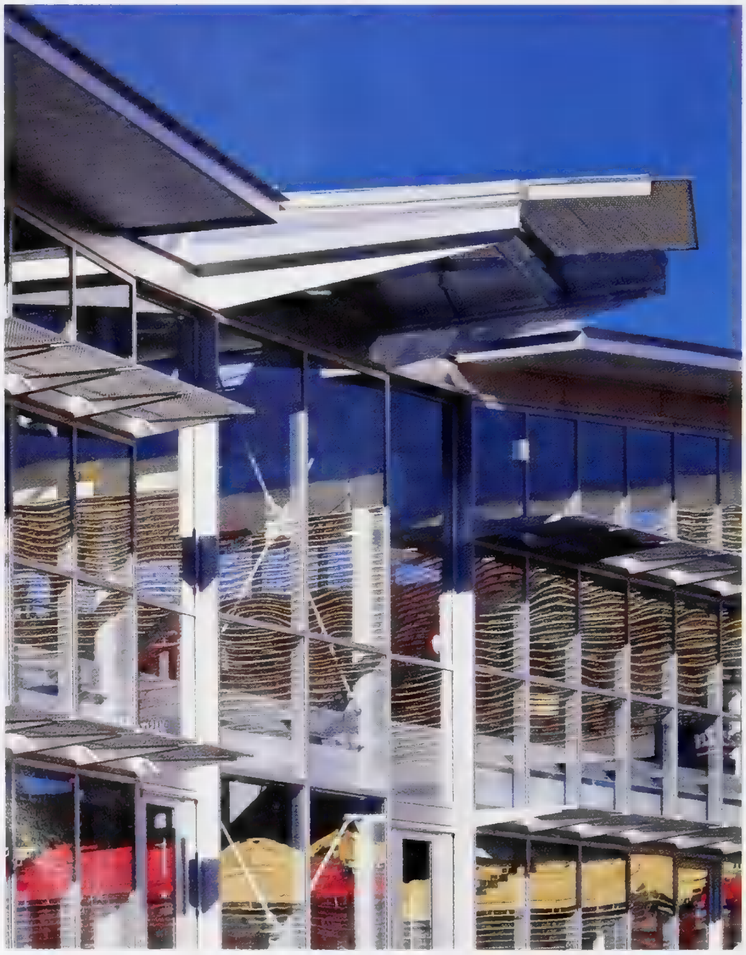


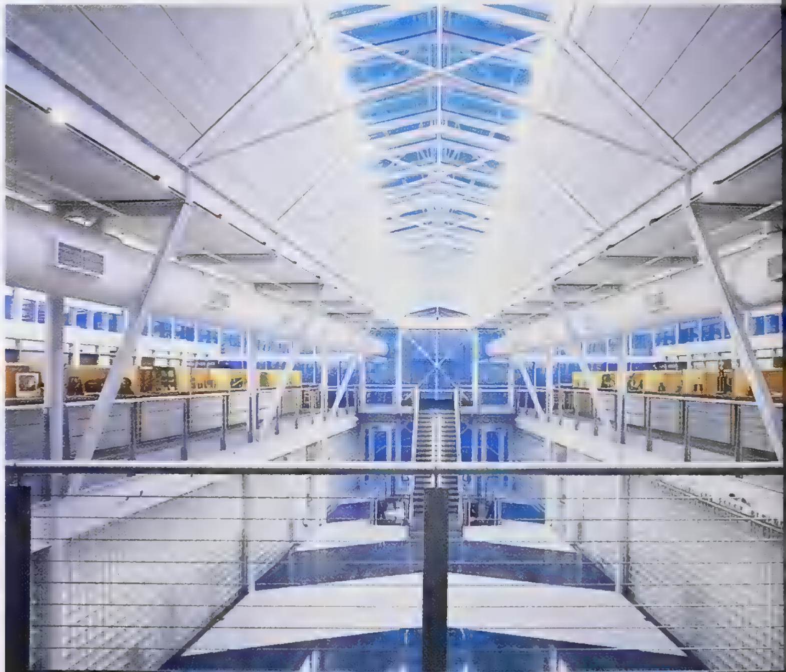


Athletic Office and Weight-Training Facility, Iowa State University
Ames, Iowa, 1997

This project, completed for one of HLKB's most loyal clients, consisted of a new athletic administration building along with the renovation of an existing building within the oval-shaped football stadium site (above). An exposed metal roof (below) hovers over office bars separated by clerestory windows that bring daylight into the building. In the existing building, a curved glass-block wall (right), topped by a skylight, was added to provide a backlit facade highlighting the stadium entrance plaza on game days.







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M.C. Ginsberg Objects of Art
West Des Moines, Iowa, 1997

The owner of this jewelry and fine accessories shop wanted a flexible, gallerylike space that would induce shoppers to focus on the items for sale. Nondescript materials were used to establish a quiet backdrop for the precious metals and stones on display. The materials and cabinetry, anchored by stainless-steel bolts and screws, can be dismantled and reassembled elsewhere when the owner's current lease in an anonymous strip mall expires.

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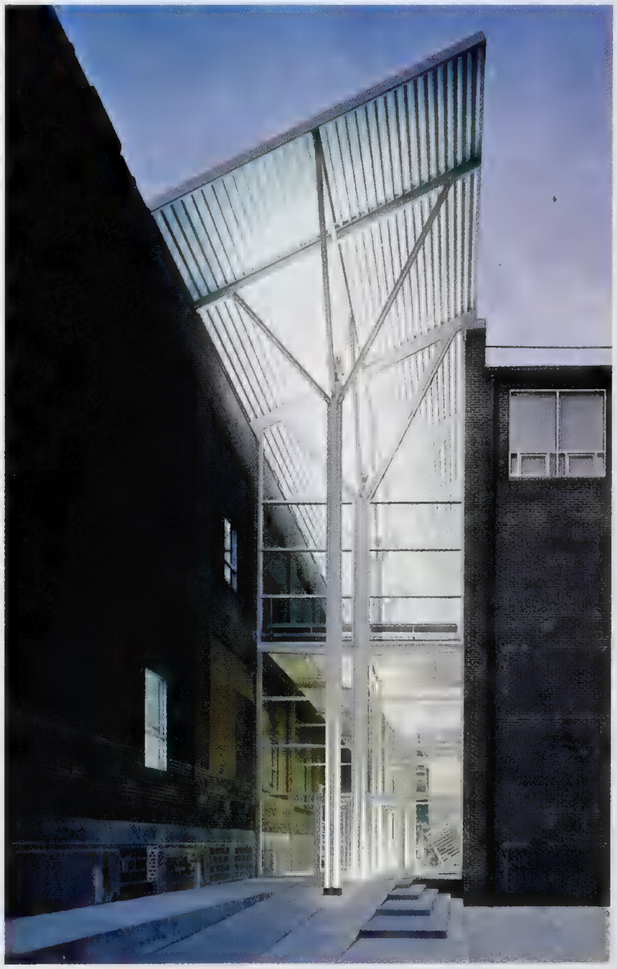
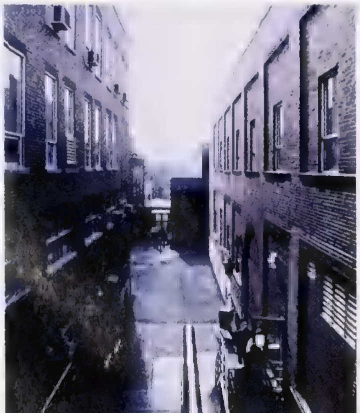
Friendship Court, Palmer College of Chiropractic
Davenport, Iowa, 1998

A service alley (below) was converted to an enclosed two-level circulation court connecting the entryways of six buildings at this campus of 1,800 students. The court provides a central orientation space for the college, which has about a dozen buildings located on either side of an arterial roadway. Existing facades were left virtually unchanged. Central columns (near and far left) bear the full structural load of the sloped roof, thus sparing the aging parapets of the older buildings.





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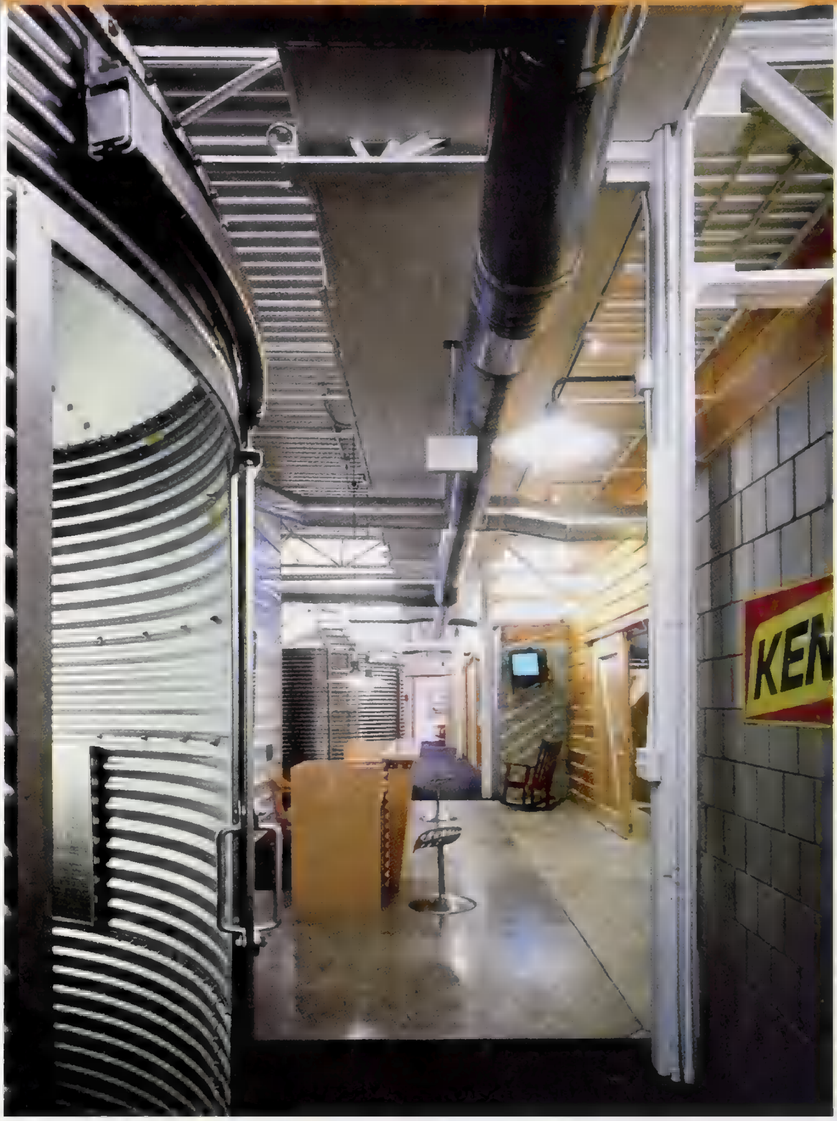
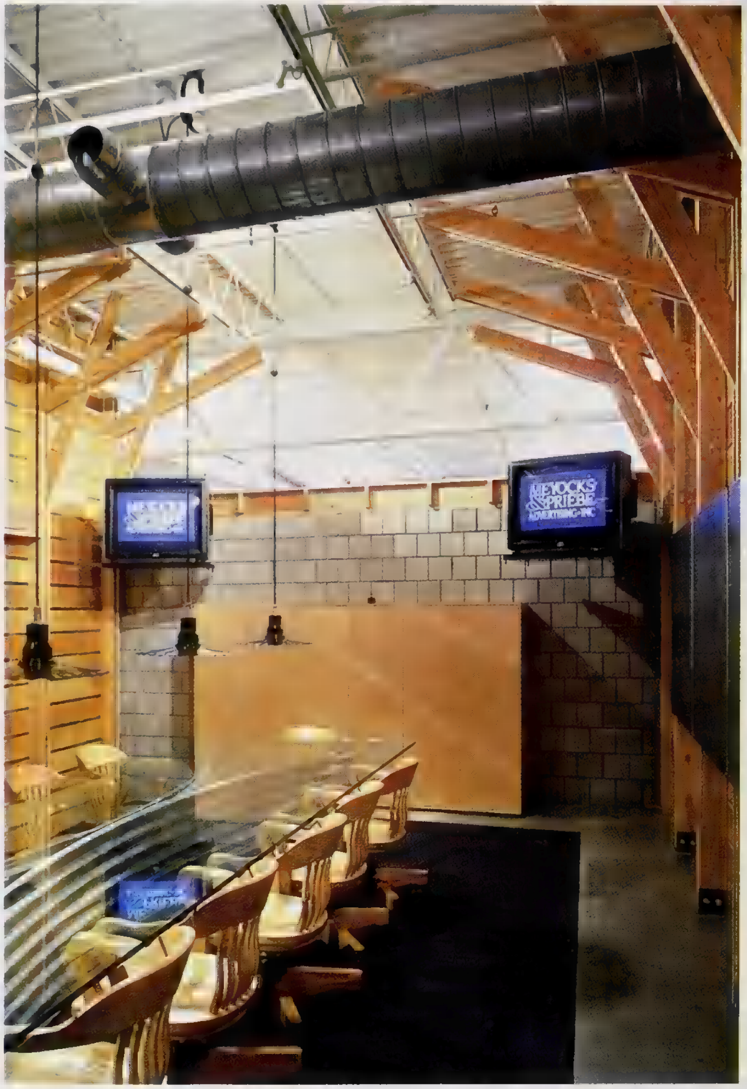
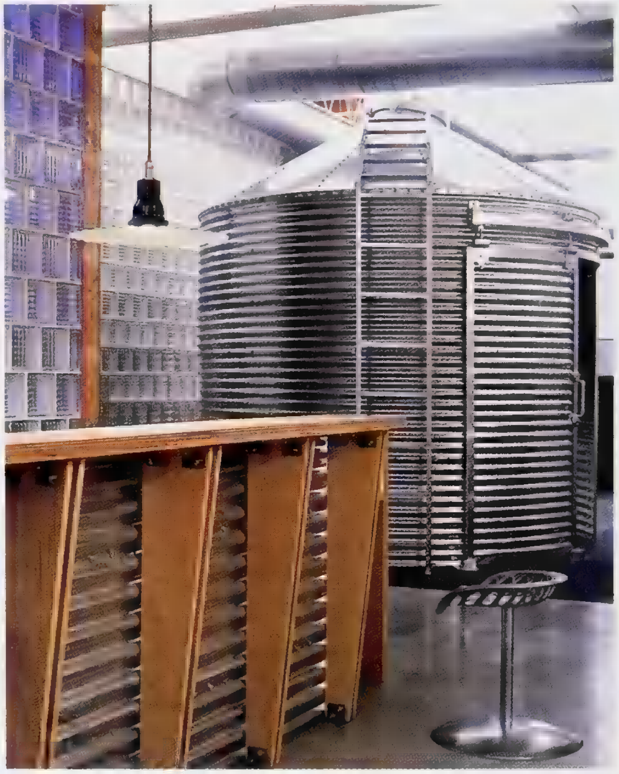


Meyocks & Priebe Advertising
West Des Moines, Iowa, 1995

The clientele of this Midwestern ad agency comprises almost exclusively agribusinesses. Agrarian imagery and farmhouse vernacular were used throughout the interior as a thematic element. Corrugated metal grain bins (left, top, and bottom) are used as meeting areas for staff and clients. A conference room (below right) is enclosed in simple slat walls, and sidewall studs extend upward to anchored cross-bracing and stud rafters. The design team brainstormed extensively with the client and studied catalogs of farm implements, machinery, and agricultural supplies to develop design concepts.





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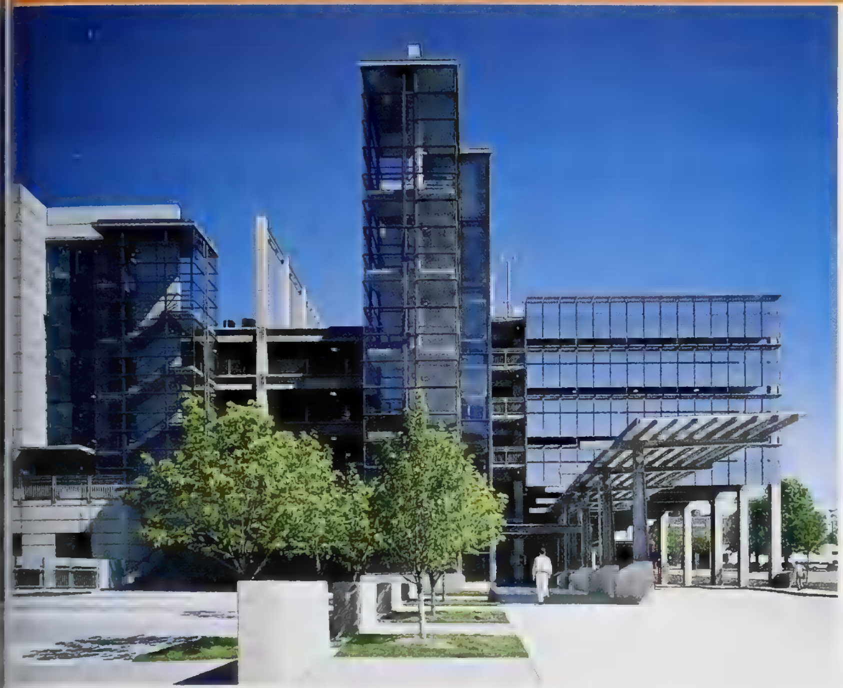

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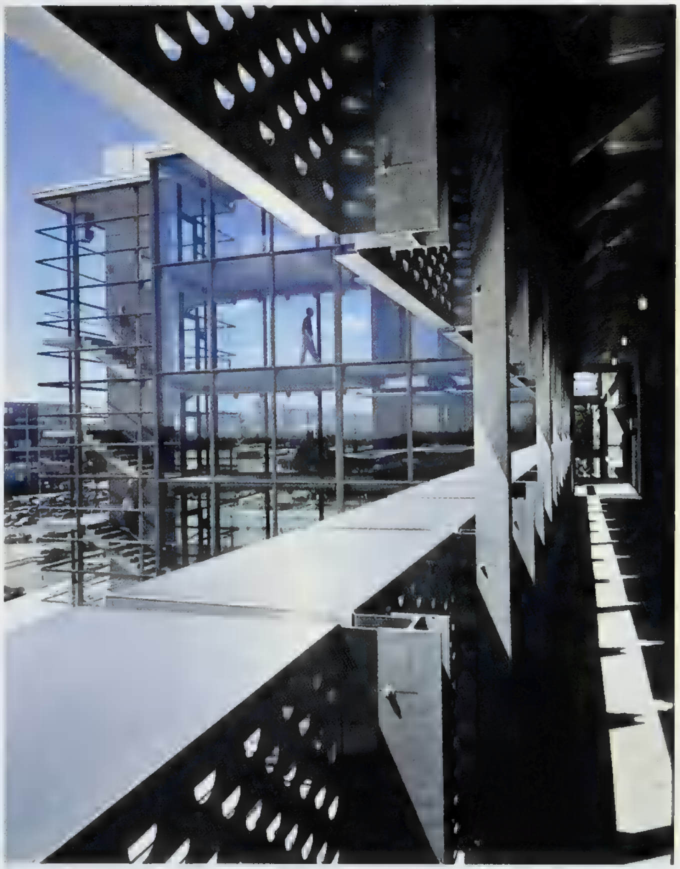
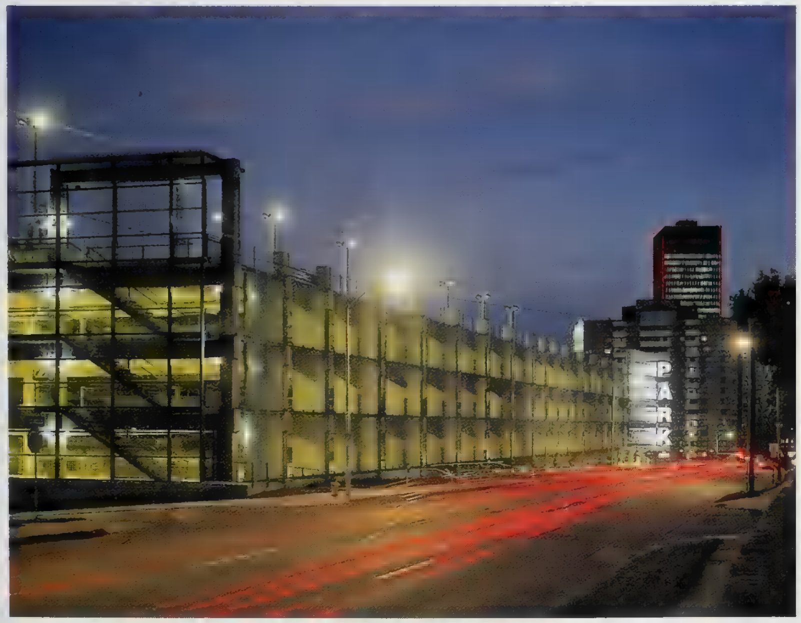
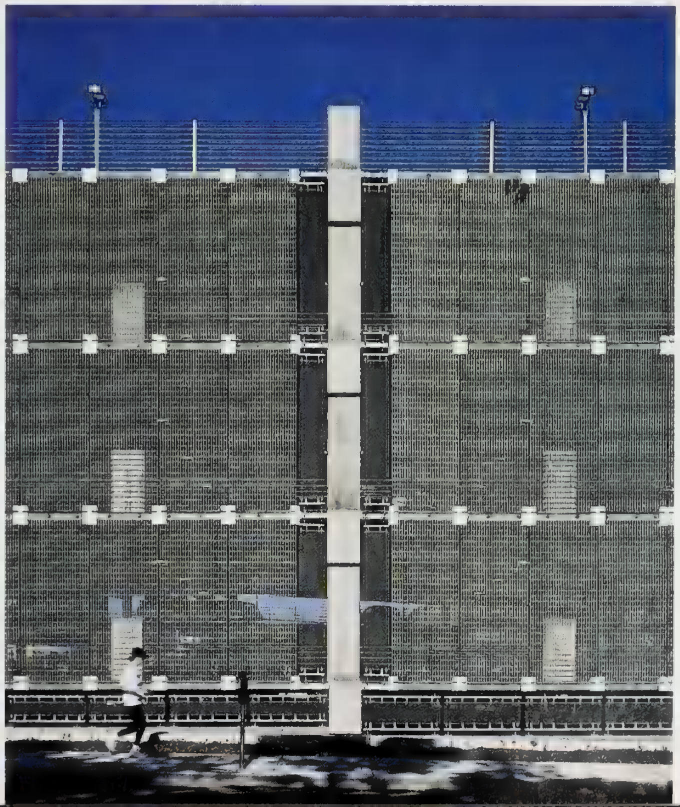
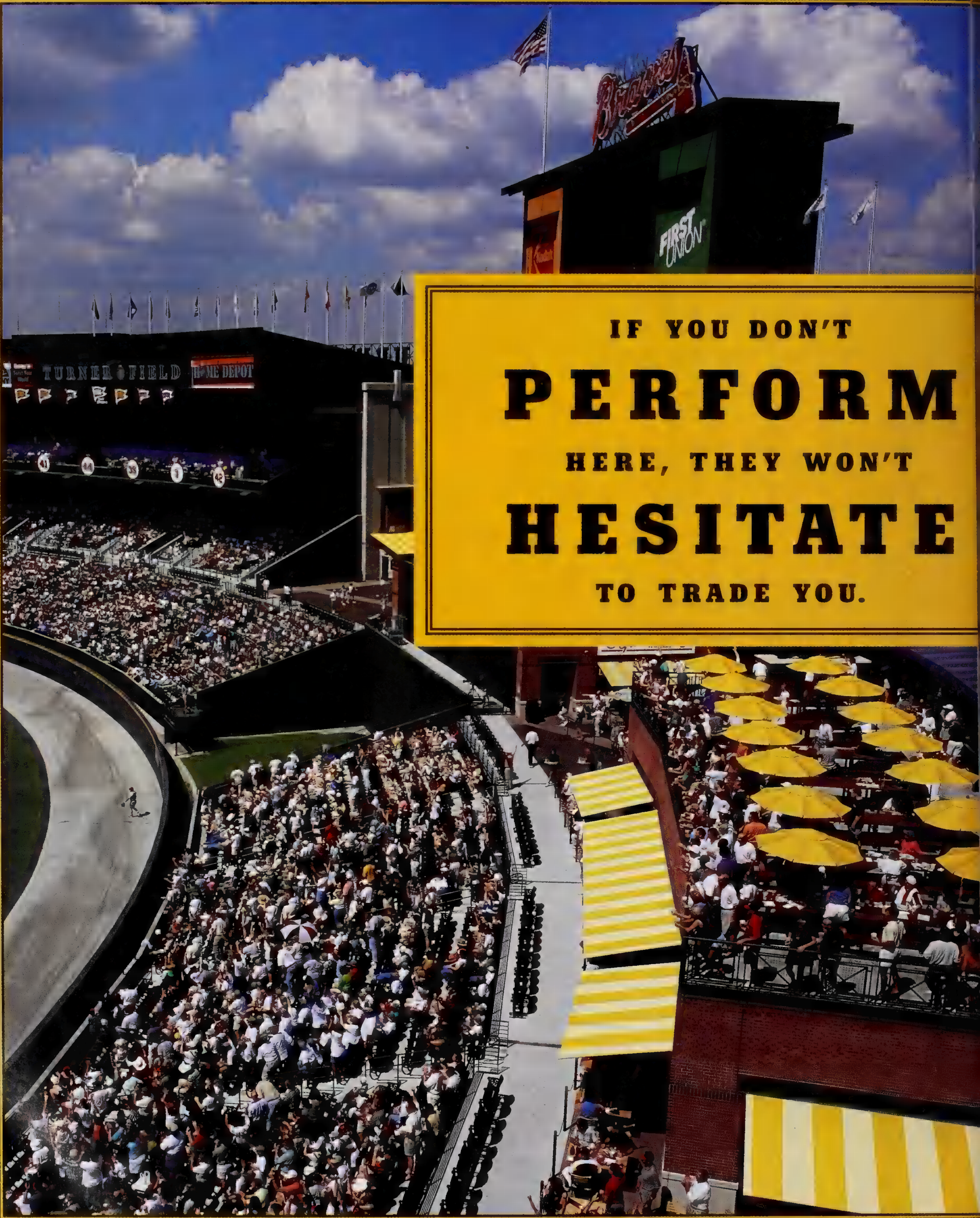


Center Street Park & Ride Facility
Des Moines, 1999

This project comprises a 1,815-vehicle parking structure, a daycare center for 100 children, and a bus station serving the central business district of the city. The service elements, pulled from a simple rectangular parking structure, give architectural expression to the project. The south edge of the structure (above) is set back from the street to form a public plaza and play area for the daycare center at the interface between the garage and the downtown area. The glassed-in elevator and stair towers (right and below left) humanize the scale of the garage and provide unique views of the city from within.







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CIRCLE 108 ON INQUIRY CARD

Michael Graves

The road to gold

RECORD sits down with this year's AIA Gold Medalist to find out how fame, controversy, and academia have defined his role as an architect

Princeton architect Michael Graves, FAIA, *the recipient of this year's AIA Gold Medal, joins a panoply that includes Frank Gehry,* FAIA, *Ricardo Legorreta, Hon.* FAIA, *and Thomas Jefferson (posthumously). Known for his signature buildings and products, as well as the immensely popular wrapping of the Washington Monument during its restoration, he also has served as an influential professor at Princeton University for the past 39 years. Arguably one of the first architects to bring "branding" to architecture, Graves has helped elevate the recognition of architecture in the public consciousness. Returning to the early Modernist interest in designing furniture and objects as well as architecture, Graves has an inventory that includes more than 900 products for the Target chain alone. He spoke with* RECORD*'s editor-in-chief, Robert Ivy, at his domestically scaled studio in Princeton, surrounded by his drawings and his dogs.*

AR: *What meaning does fame have for you?*

MG: What it does, I suppose, is give you a familiarity with people who might be willing to call you to design something. I find that it more often occurs in product design, and that the knowledge of a name is somehow more important to that sphere of what we do than to architecture.

AR: *Is fame all positive?*

MG: There is a backlash. If somebody is too well known, there's an assumption that they're too busy, they'll be too expensive, that they will be unavailable, that this is just a small project. This happens a lot. But generally if I get a call—as I did a couple weeks ago from somebody in France to design crystal for a well-known company—it's because of the name recognition.

AR: *Can you improve your recognition and your position in the marketplace?*

MG: Name recognition has a kind of value, I suppose, that one can't go after. It won't work if you go after it. If you had some PR guy out there trying to push your name, people would smell a rat immediately.

AR: *And your position as someone of individual vision has resulted in recognition. You've always been considered a star. What has this aura meant for your work?*

MG: Well, I think I would like to blur or fuse the distinction between, not stars, but architects of great energy, worth, and vision with real work. I don't see the difference. I refuse to be a paper architect on one hand, and I refuse to be, you know, some three-letter corporate thing on the other. I'd rather practice law than do either of those. But then you have somebody like John Hejduk, who made a contribution to architecture greater than most. And John built very, very little, almost nothing.

AR: *There's a lot of construction going on. What's the difference between mere building and architecture?*

MG: There's a lot of construction. But when you're around other architects, you can sense very quickly those who are engaged in their craft in a way that is their life. And there are some who are engaged in their business that is their life. And sometimes they're one and the same person, or same firm. But I don't think it's confusing, where the ideas are coming from and how they're translated. Sometimes the translations by commercial firms are very interesting.

AR: *How did you, a modern man, develop a love of history? Where did your interest in history begin?*

MG: Well, you find in that kind of rigor, if you'll call it that, that there are ways of broadening the idea, especially when you're reading people like Colin Rowe [the late influential theorist and RIBA gold medal winner], who was reinterpreting Le Corbusier in a way where he's even linked to Palladio and Palladio's grid. You think, my goodness, is this possible? Is the language continuous? Where does it break and where is it continuous, and what are we doing here? All of that gave me—and I think Colin is key here—a way of looking at people like Le Corbusier in a more cultural way than if you were looking at him stylistically, as some people in school did.

AR: *Do any other individuals stand out in your development?*

MG: Arthur [Drexler, former director of the architecture and design

Left: Graves in the library of his Princeton, N.J., home.

department at MOMA] was interested. He wanted to know what was going on in academia, he wanted to know what was going on in young architects' minds at that time, and it was quite by coincidence that Peter Eisenman and I met him. He came for a lecture in art history, which was the next building over, but he came to the school of architecture [at Princeton]. Peter and I were working in the basement, where our little office was, doing an urban design project for what we called the Jersey Corridor back then, the New Jersey megalopolis.

I remember that Peter and I were lobbying people like yourself to get a conversation going in the journals. And I remember Peter Blake [then editor of *Architectural Forum*] saying to us, "The only time I'll publish you is when your buildings get built." Period, end of story.

But later we did convince *Architectural Forum* to allow five other architects to criticize us. So that was the article called "Five on Five." And in that article, [architect] Charles Moore [1991 Gold Medal winner] made a comment about the Hanselmann House, which I thought was charming and wonderful and devastating. He said, "Michael tells us that this means that and the other…and everything is a metaphor for something in the landscape." But he went on, "I'm sorry I caught so few points [in the book *Five Architects*], and I'm rather angry about it, since I test well for this sort of thing." He did test well. And I thought, well, if I can't reach Charles Moore, then I can't reach the man on the street.

AR: *Where did you see your own work fitting into this cultural matrix?*

MG: I didn't want to be populist, but at the same time I didn't want to be private. And I knew the work of Wallace Stevens, the poet. And Stevens had said, "You have to be literal enough to get the individual into the text. You have to be abstract enough to keep him there." And somehow I needed to find that balance between what was abstract and what was figurative, and that's when I started to rethink things. It was an important moment for me to take stock.

AR: *But after you changed to what you have called more "figurative" work (and what others have labeled Postmodernist), it wasn't all smooth sailing, critically, was it?*

MG: I remember being attacked, I think it was after a lecture, and I had a pretty good ability to think on my feet. It was almost like going back to school, where you would put your work up and somebody would confront you. It was a pretty hostile attack, and I remember coming through it in a way that I was able to verbalize things that [I had not articulated] working alone in my studio at that time. It was all new to me. I mean from the Fargo Bridge to the Portland Museum to San Juan Capistrano Library.

AR: *Did you feel you were onto something at the time?*

MG: We were onto something that was, in itself, compelling enough. Not necessarily just to last a lifetime, but that it would keep me going. It cost me dearly in terms of my domestic life and so on, but I was working, working, working all the time. As I do now, but, I mean, it was a moment of discovery.

Now I'm criticized because I'm still refining that language and people want me to throw it out and start again with something else. That's what I hear. We are a society that wants a new aesthetic every Thursday morning.

AR: *Could you ever see yourself evolving, as you've been evolving this language, or do you see yourself changing? You've certainly made shifts in terms of your work. Corbu changed.*

MG: I think the language is a lot different today. But there is a lack of breadth today that always astonishes me. That architects—not all architects, but some architects—can only talk about their latest commission or competition or whatever it is. It's a kind of one-upmanship, instead of talking about architecture itself.

AR: *Architectural theory has been the coin of the realm for the last decade. You seem more drawn to graphic expression.*

MG: On my side of it, if I think about a theoretical proposition in architecture, I'm drawing it. Drawing and thinking are not one and the same thing, but they are part of the same attitude of making something. If you take on the role of [*Fountainhead*'s] Howard Rourke and you say, "No, it can only be this way," then you're finished.

"NOW I'M CRITICIZED BECAUSE I'M STILL REFINING THAT LANGUAGE, AND PEOPLE WANT ME TO THROW IT OUT AND START AGAIN WITH SOMETHING ELSE. WE ARE A SOCIETY THAT WANTS A NEW AESTHETIC EVERY THURSDAY MORNING."

AR: *You work at radically different scales, from megahotels down to kitchen utensils. How do these two things interplay?*

MG: [In product design], there's a wonderful relationship between the small scale and the larger scale. Now I can somehow be a Modernist or a Minimalist, in making something this big and I couldn't lift it, without two hands; I might find a clever way to disguise the handle within the vessel. I've elected never to do that. I don't try to hide the parts but try to celebrate them. And that tactility is very important to me.

It's like the apocryphal story that Philip Johnson once told me—I think it was apocryphal—about two women who came into his Glass House. They were unfamiliar with the Barcelona chairs and said, "Oh, what dreadful chairs. They must be very uncomfortable. Are they, Mr. Johnson?" He said, "To you, they will be uncomfortable because you've already judged them as uncomfortable. To me, they're very comfortable."

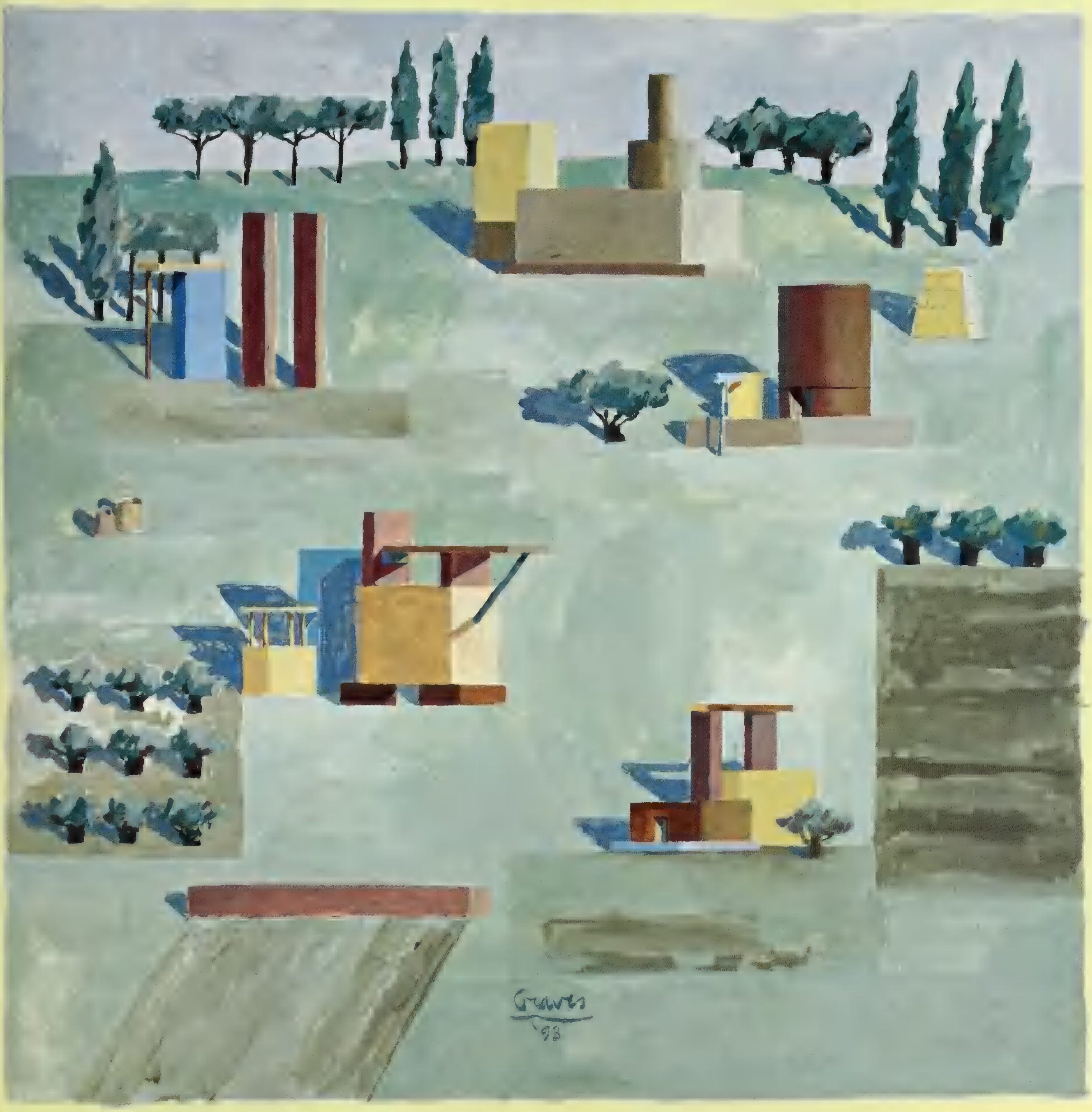
AR: *Has product design made you rich?*

MG: No, but the way it operates is completely different from architecture. I made that little frame up there and I said, "Will that be there forever?" They said, "If it sells, but only if it sells." Made us rich? No, but it does help pay for architecture. I'm not getting rich, but I can pay my bills.

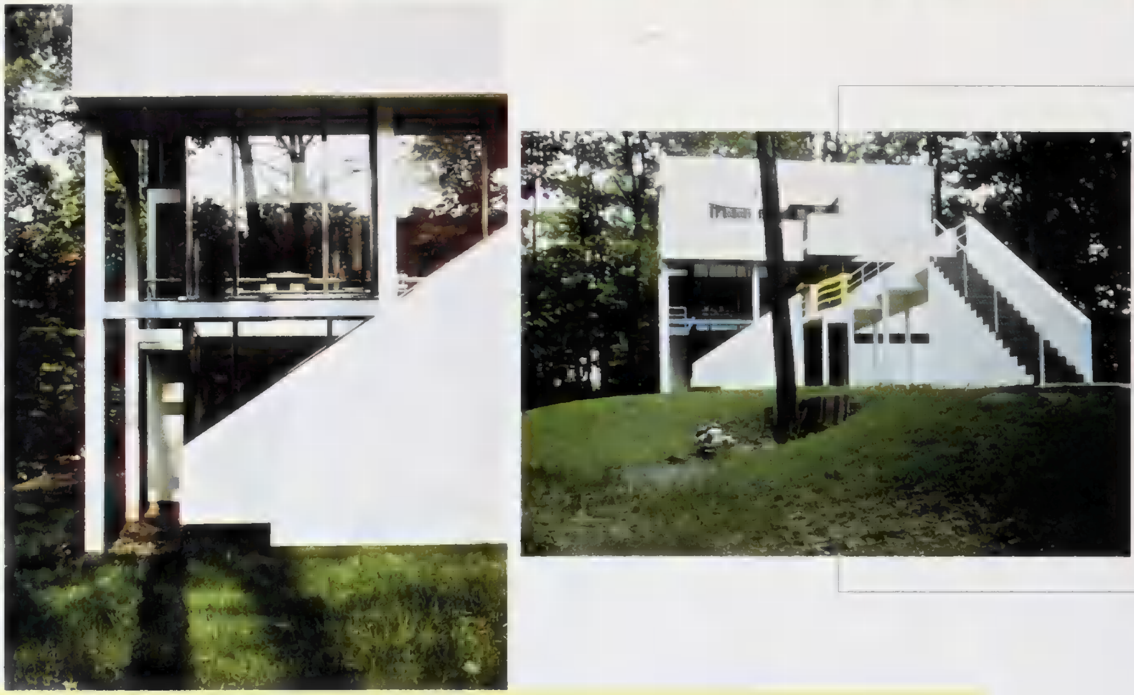
AR: *What do you want to do next?*

MG: More of the same. I mean, it's like your cup runneth over. You just have so many nice things to deal with today and it's just a joy. I'm a positive character by nature, but this is better than I could ever have imagined. ■

WWW For audio excerpts of this interview, go to ***www.architecturalrecord.com***



Left: Washington Monument restoration scaffolding. Above: A Michael Graves oil-on-canvas landscape, 1993.



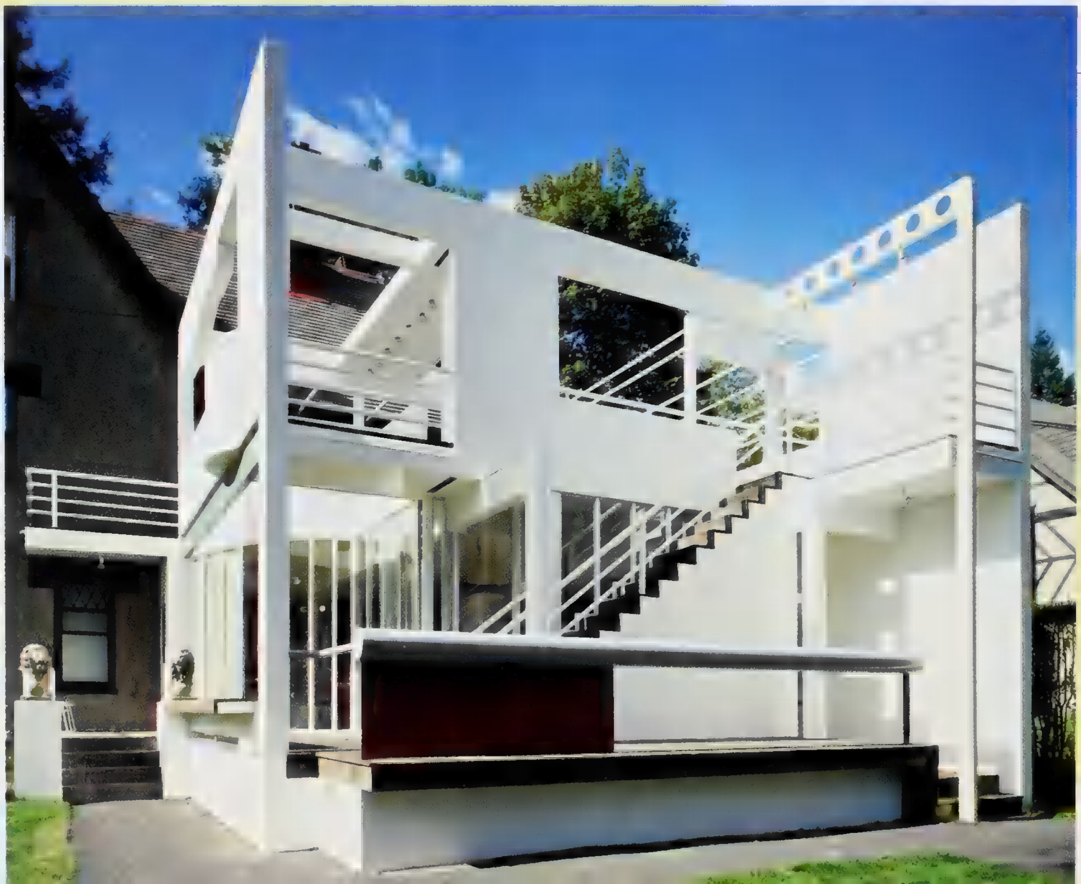
Hanselmann Residence
Ft. Wayne, Indiana
1967

This award-winning house for a family of two adults and four children featured Corbusian forms, which provided no clue to Graves' future role as one of the fathers of Postmodernism. The house and the space immediately in front of it make a double square in plan and a double cube volumetrically.

> "MICHAEL'S WORK IS POETIC, PERSONAL, AND LITERATE. HIS COMMITMENT TO DRAWING AND PAINTING HAS BEEN TRANSLATED INTO AN ARCHITECTURE OF INCREDIBLE RICHNESS AND ANIMATION: COLOR, MATERIALITY, TEXTURE, AND FORM COMBINE TO EVOKE AN ARCHITECTURE OF INVENTION." —CHARLES GWATHMEY, FAIA

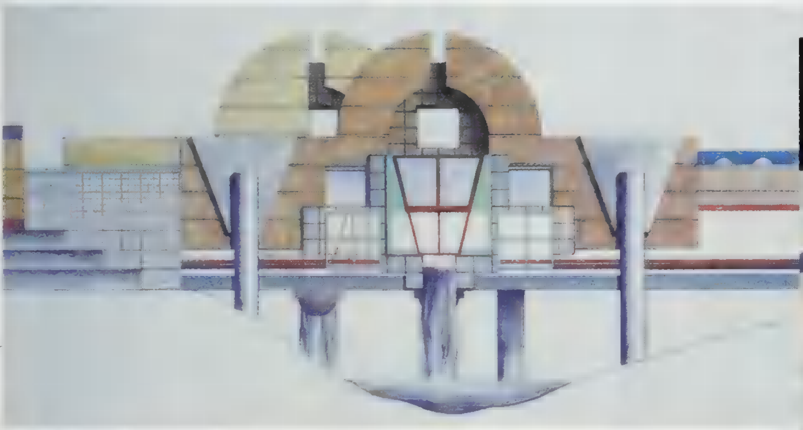
Benacerraf House
Princeton, New Jersey
1969

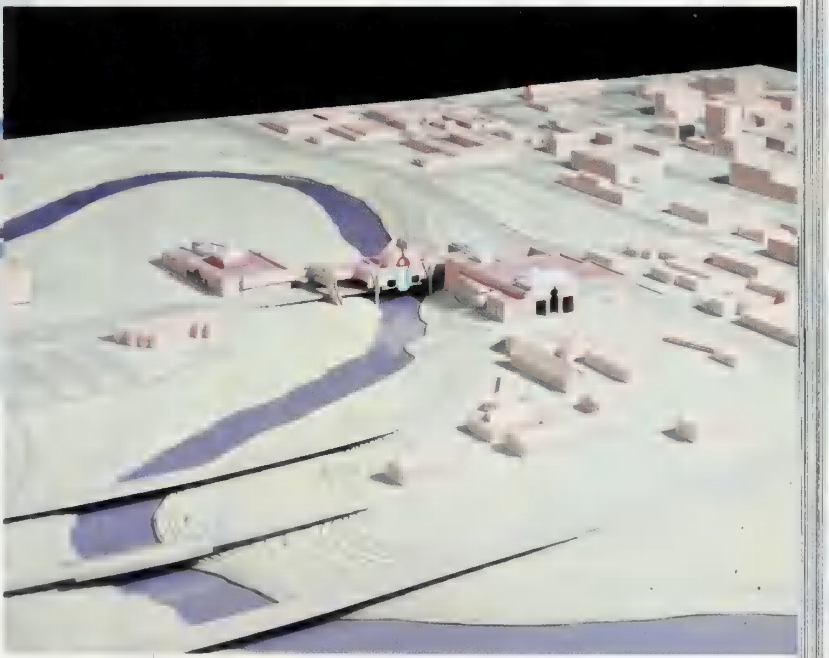
The Benacerraf House addition was intended both as a freestanding pavilion in the garden and as an extension of the living spaces of the original house. Shown here is a view from the garden.



Snyderman House
Ft. Wayne, Indiana
1972

Perhaps the best example of the Modernist work of Graves' early career. Although efforts are under way to save the house, a developer that owns the property is planning to raze it. [OCTOBER 2000, page 38].





Fargo-Moorhead Cultural Center Bridge
Fargo, North Dakota, and Moorhead, Minnesota
1977

Fargo and Moorhead are twin cities in the adjacent states of North Dakota and Minnesota. A cultural center, which was planned but not built, would have linked the two communities. An art museum was to span the bridge, connecting a concert hall and public radio and television stations with a history museum.

> "IN MY HUMBLE OPINION, MICHAEL GRAVES IS ONE OF THE MOST TALENTED ARCHITECTS ON THE PLANET TODAY. HIS CAREER HAS BEEN ONE OF HIGH RISK TAKING, AND I BELIEVE THE PAYOFF HAS BEEN EXTRAORDINARY."
> —FRANK O. GEHRY, FAIA

Gunwyn Ventures Professional Office
Princeton, New Jersey
1972

The upper three floors of an existing 19th-century office building were renovated for a capital investment firm. Major sections of the structure between the second floor and the roof were removed, and an independent system of columns and beams was erected.

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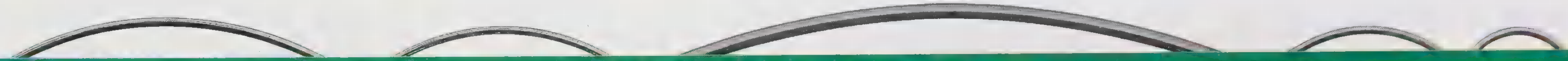
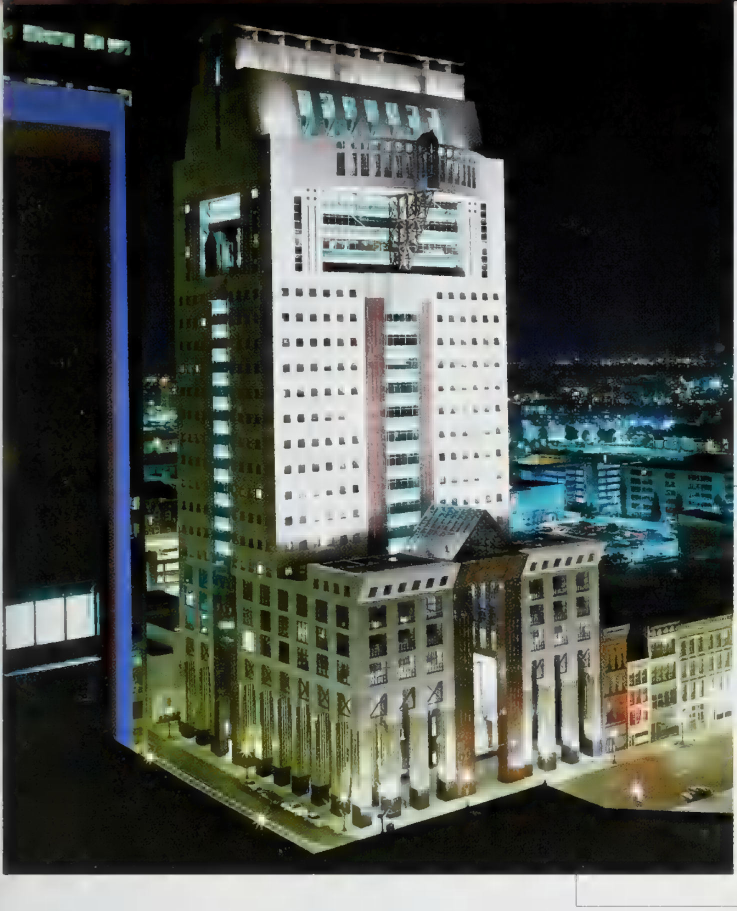
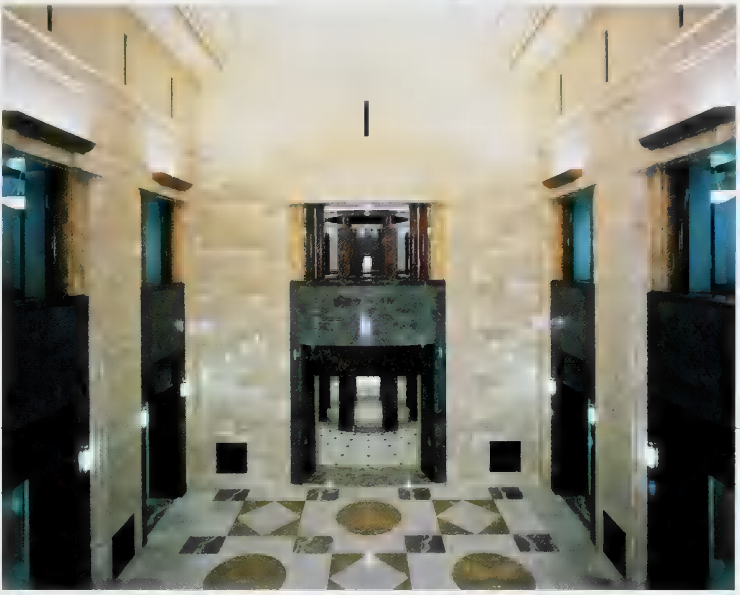


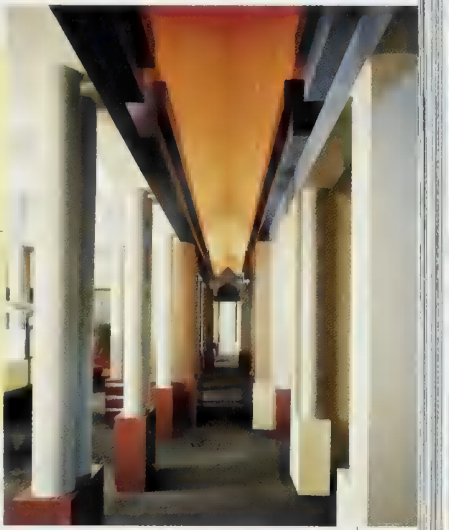




The Humana Building
Louisville
1982

A 26-story office tower in downtown Louisville, Humana is the headquarters for an American healthcare company. The 525,000-square-foot building includes two parking levels below grade, retail shops on the first floor, and offices and a conference center above. Above: the entrance lobby.

> "HIS POWERFUL EARLY ARCHITECTURE SENT SHOCK WAVES THROUGH THE PROFESSION AND OPENED THE EYES OF ALL YOUNG ARCHITECTS TO A WHOLE NEW (AND OLD) WORLD THAT WAS OVERWHELMINGLY RICH IN OPPORTUNITIES, ESPECIALLY IN COMPARISON TO THE ONE THEY HAD BEEN TAUGHT WAS THEIR LIMIT." —DAVID M. CHILDS, FAIA

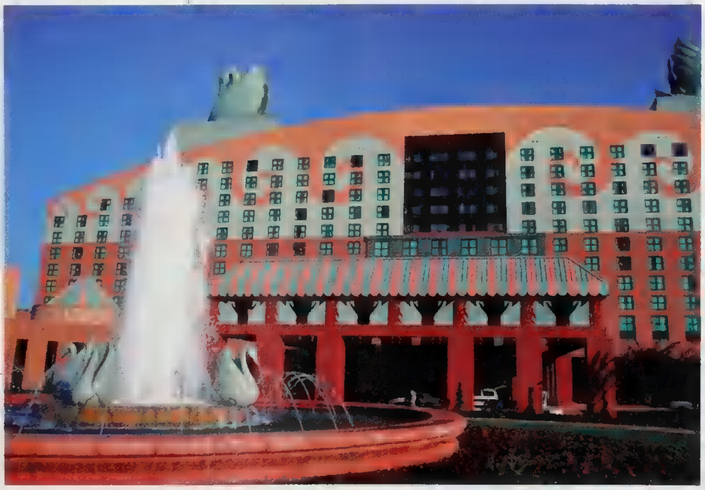


Sunar Furniture Showrooms
Multiple locations
1980–1986

Graves designed 11 furniture showrooms and offices for Sunar, including spaces in Chicago, Dallas, Los Angeles, New York, and London. The Houston showroom (above) was organized to offer a variety of spatial sequences, accommodating various pieces of furniture and office systems.

Walt Disney World Resort
Swan Hotel/Dolphin Hotel
Lake Buena Vista, Florida
1990

The 1,500-room Dolphin Hotel faces the 12-story, 758-room Swan Hotel across a large man-made lake. Both hotels contain extensive convention facilities, restaurants, and retail shops. The 2-million-square-foot project features a reinforced-concrete-and-steel superstructure and EIFS with painted murals.



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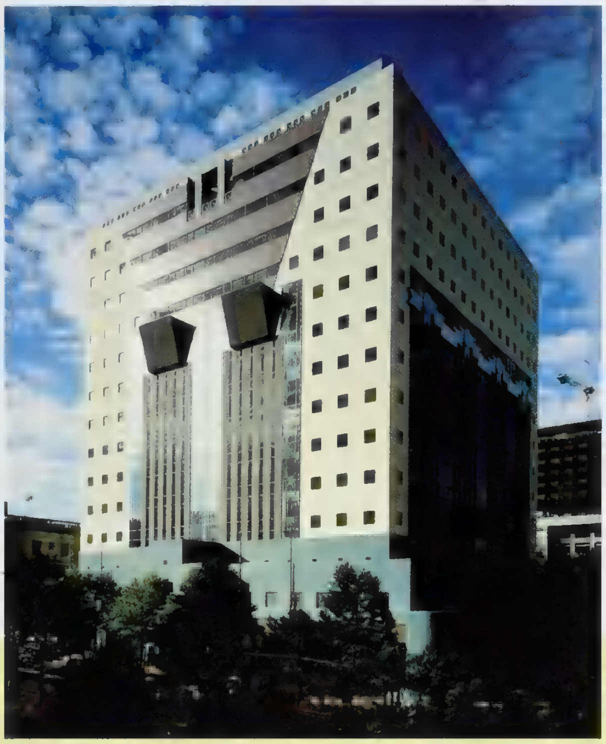
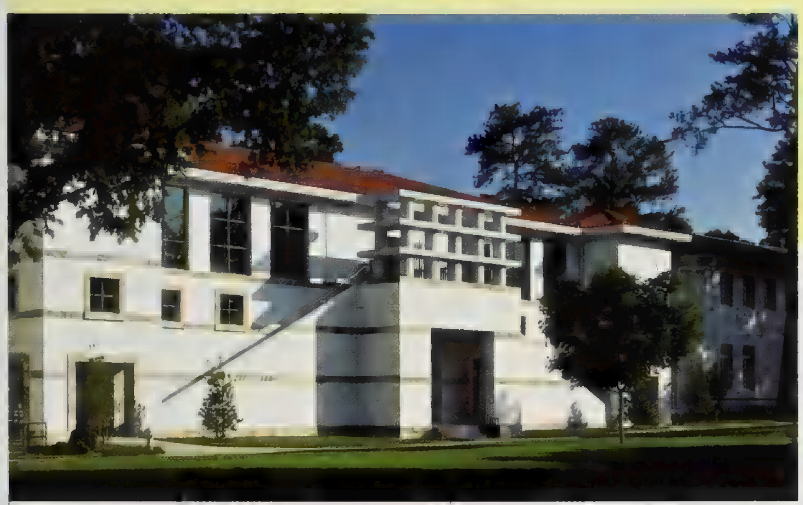
CIRCLE 110 ON INQUIRY CARD

Portland Public Office Building
Portland, Oregon
1982
The Portland Building was a design-build competition sponsored by the city of Portland. Located on a 200-by-200-foot downtown block, the building houses the city's municipal offices. The facades are organized in a classical three-part division of base, middle or body, and attic or head. View from Fifth Avenue shown.

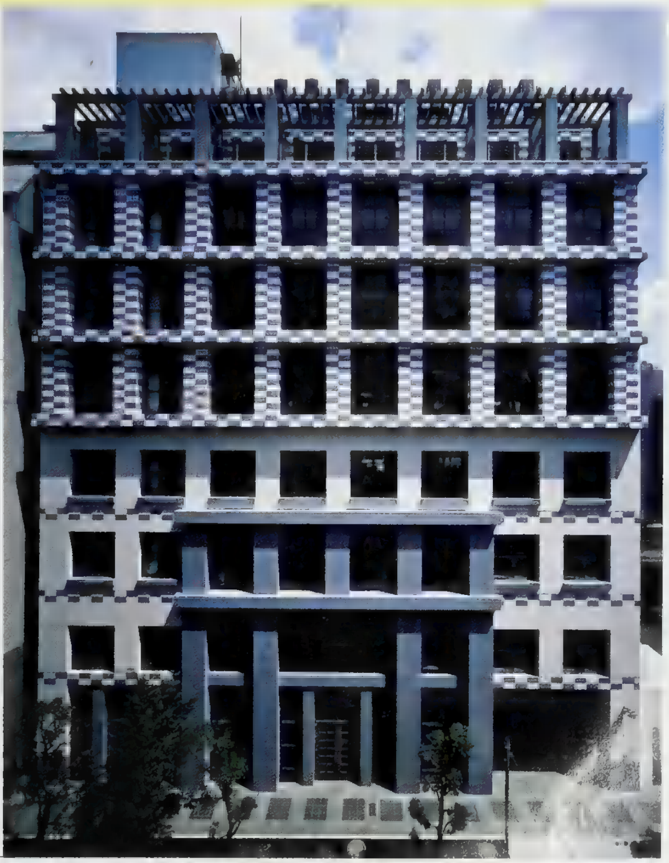


> "HE ATTEMPTS TO REACH A WIDER AUDIENCE AND TO COMMUNICATE BY THE WAY IN WHICH HE RELATES HISTORY TO THE PRESENT MOMENT, MAKING US LOOK AGAIN AT OUR PAST WITH RENEWED INTEREST AND RESPECT."
> —RICHARD MEIER, FAIA



Michael C. Carlos Museum,
Emory University
Atlanta
1993
The museum is a 35,000-square-foot expansion of Emory's ancient art and archeology museum. It is connected to a historic 1916 building on Emory's original quadrangle, featuring a steel frame, Georgia marble, and a clay tile roof.

Tajima Office Building
Tokyo
1993
This nine-story corporate office building for Tajima is located on the banks of the Kanda River in Tokyo. In addition to Tajima's corporate offices, the building contains a showroom for the company's tile product line. The upper portion of the building is composed of a stacked colonnade with a pattern of blue and white tiles.



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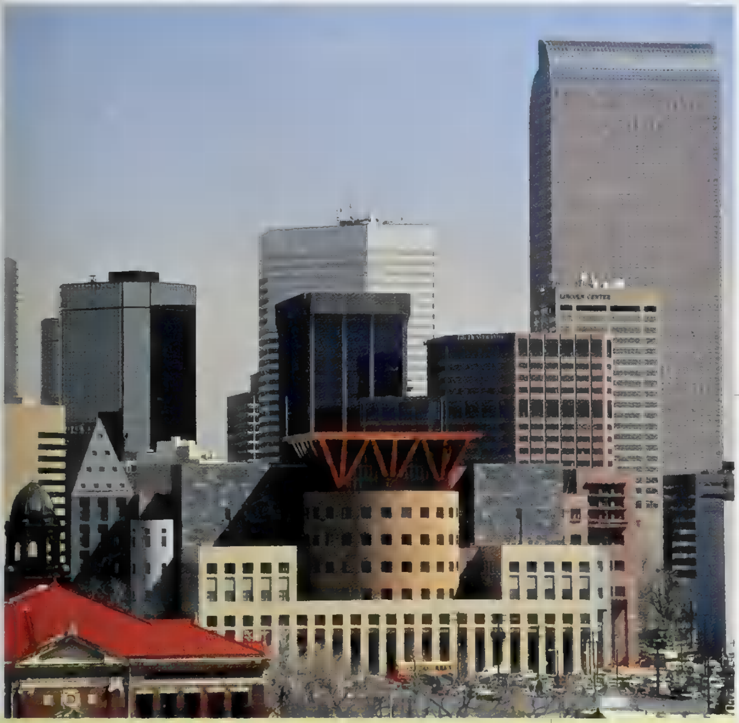
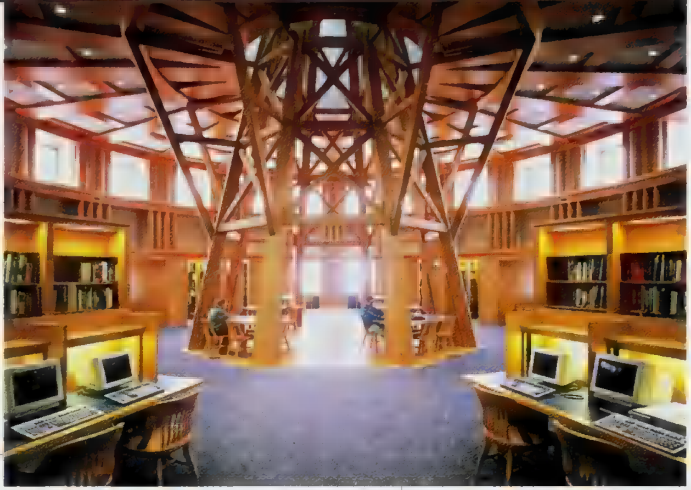
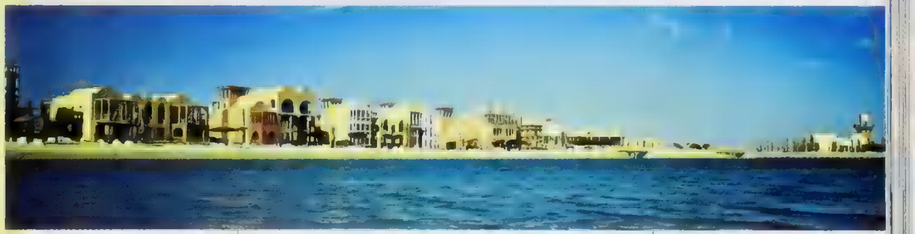




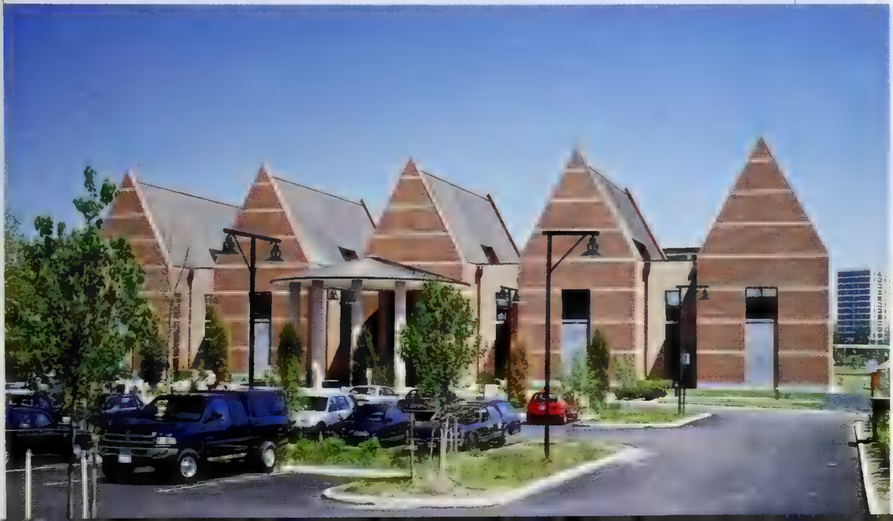
Denver Central Library
Denver
1996
The winning design in a competition for the renovation and expansion of Denver's landmark library building, designed in 1956. Above right: interior of the Western History reading room.

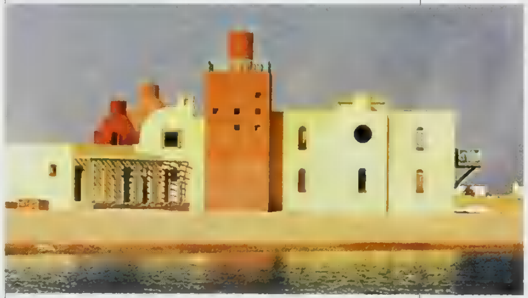
> "MICHAEL ENGAGED THE DENVER PUBLIC LIBRARY STAFF AS FULL PARTNERS. HE ALWAYS ACTED UPON HIS BELIEF THAT GREAT BUILDINGS RESULT FROM GREAT COLLABORATIONS BETWEEN ARCHITECTS AND CLIENTS."
> —RICK J. ASHTON, CITY LIBRARIAN



Miramar Resort Hotel
El Gouna, Egypt
1997
A five-star resort on the Red Sea consisting of more than 400 guest rooms and public spaces built using traditional Egyptian construction methods and materials.

The Charles E. Beatley Jr.
Central Library
Alexandria, Virginia
1999
This 60,200-square-foot library features a multipurpose community meeting room with 154 seats set up auditorium-style, a full-service library for the blind, data ports at carrels for personal laptops, children's storytelling and quiet reading room, and an outdoor courtyard for reading and storytelling.





El Gouna Golf Hotel
El Gouna, Egypt
1997
A 122-unit golf hotel and club, with numerous single-family villas organized around a lagooned 18-hole golf course in a resort on the Red Sea.

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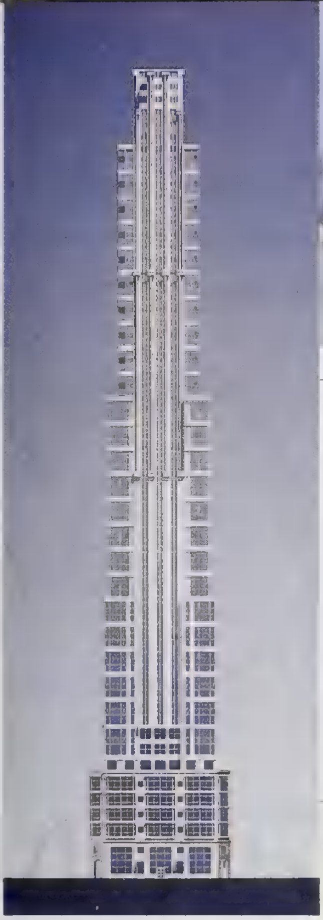
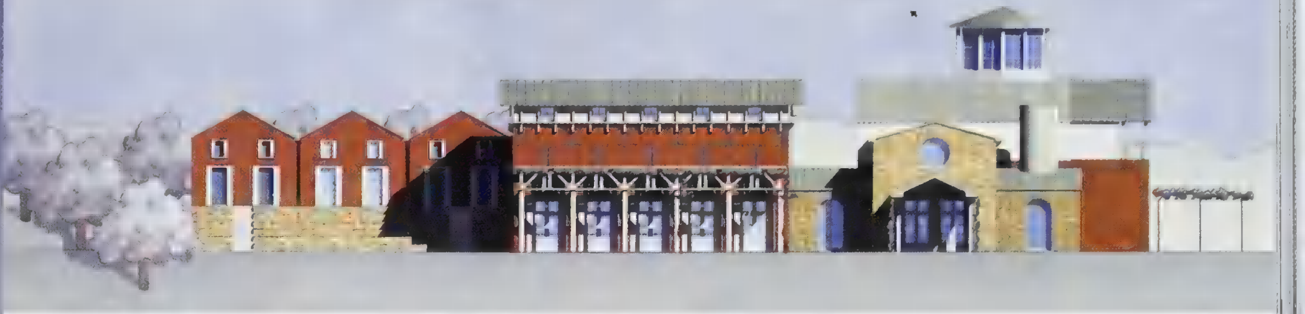




425 Fifth Avenue
New York City
Under construction/
Anticipated completion 2002

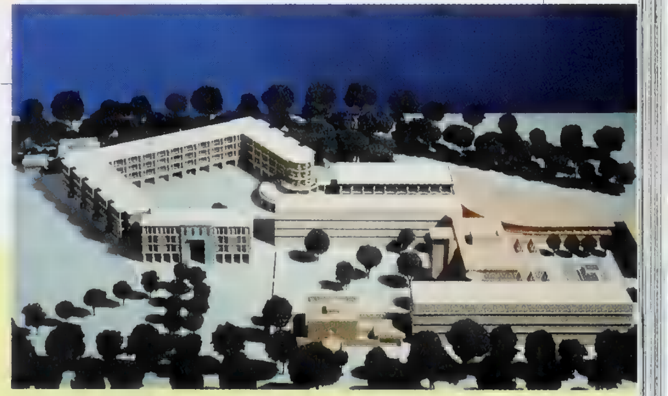
Graves' firm is completely redesigning the building facade and interiors of this 55-story mixed-use tower. The building contains offices and 176 residential units on the corner of 5th Avenue and 38th Street.

Museum of the Shenandoah Valley, Winchester, Virginia
Schematic design/
Anticipated completion 2003

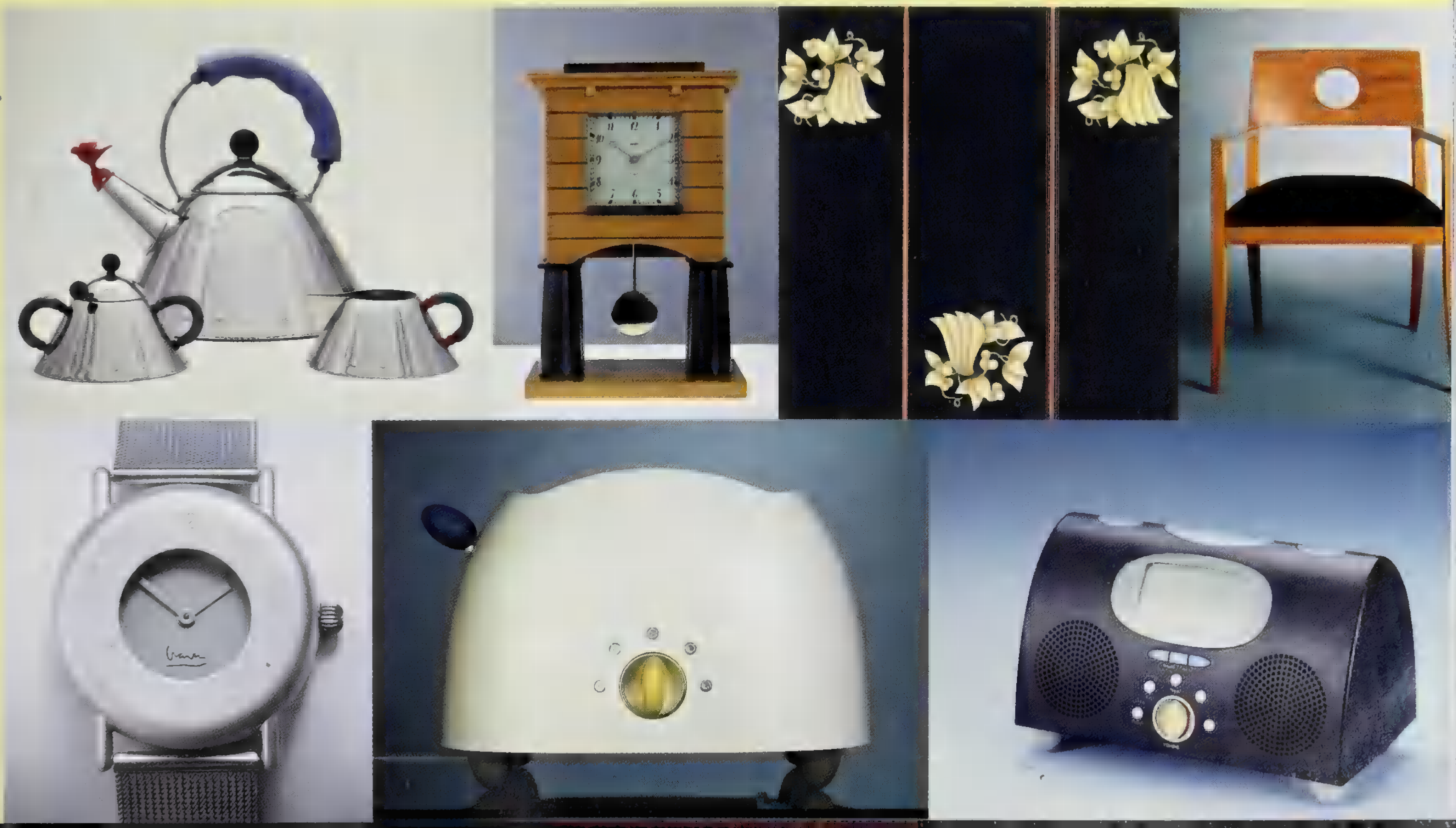
The museum is currently under design and will welcome visitors to the Glen Burnie estate and gardens. The site contains 25 acres of gardens and 264 acres of farmland.

Rice University: North campus master plan for three residential colleges, Houston
Under construction/
Anticipated completion 2003

Master plan for a new residential college within a framework that provides for the upgrade and expansion of two existing colleges (below).



PRODUCTS: (Reading clockwise) Alessi kettle, cream pitcher, and sugar bowl, 1985; Alessi mantel clock, 1986; Carpet designs for the Dialog collection by Vorwerk, Germany, 1987; Oculus chair, manufactured by Atelier International, 1989; Watch for Markuse, produced by Pierre Junod, 1992; toaster from the Michael Graves Design collection for Target, by Black & Decker, 1999; clock radio for Target, 2000.



Electric Skylight Installation

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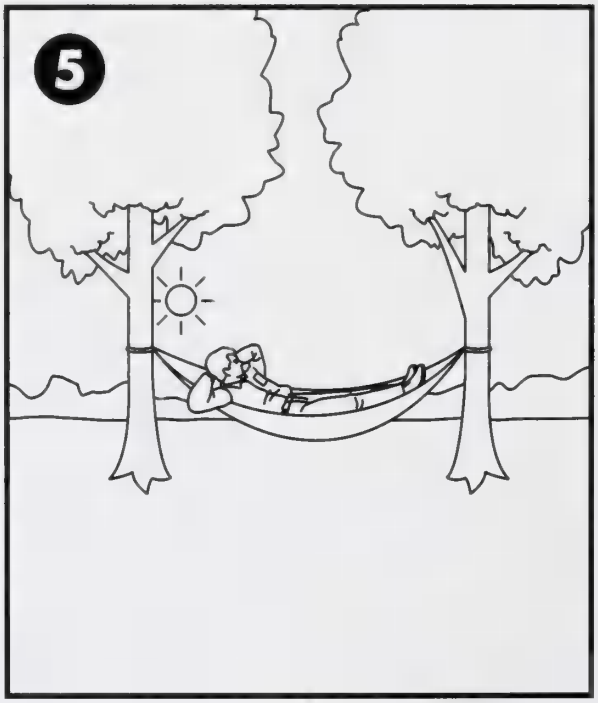
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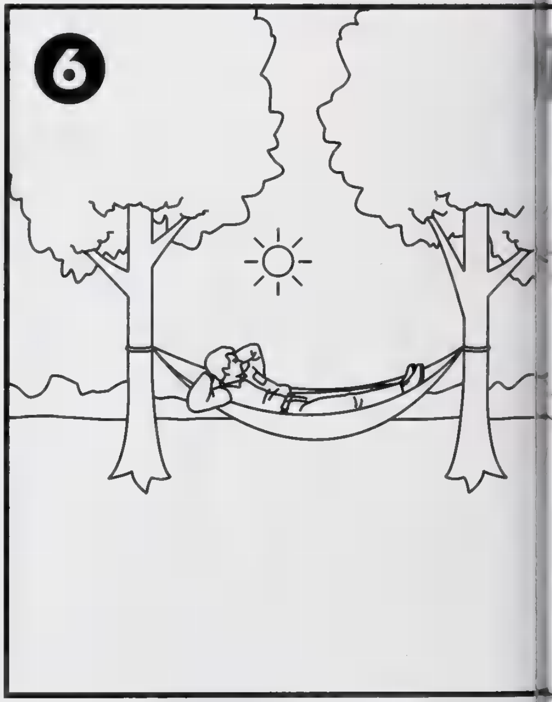
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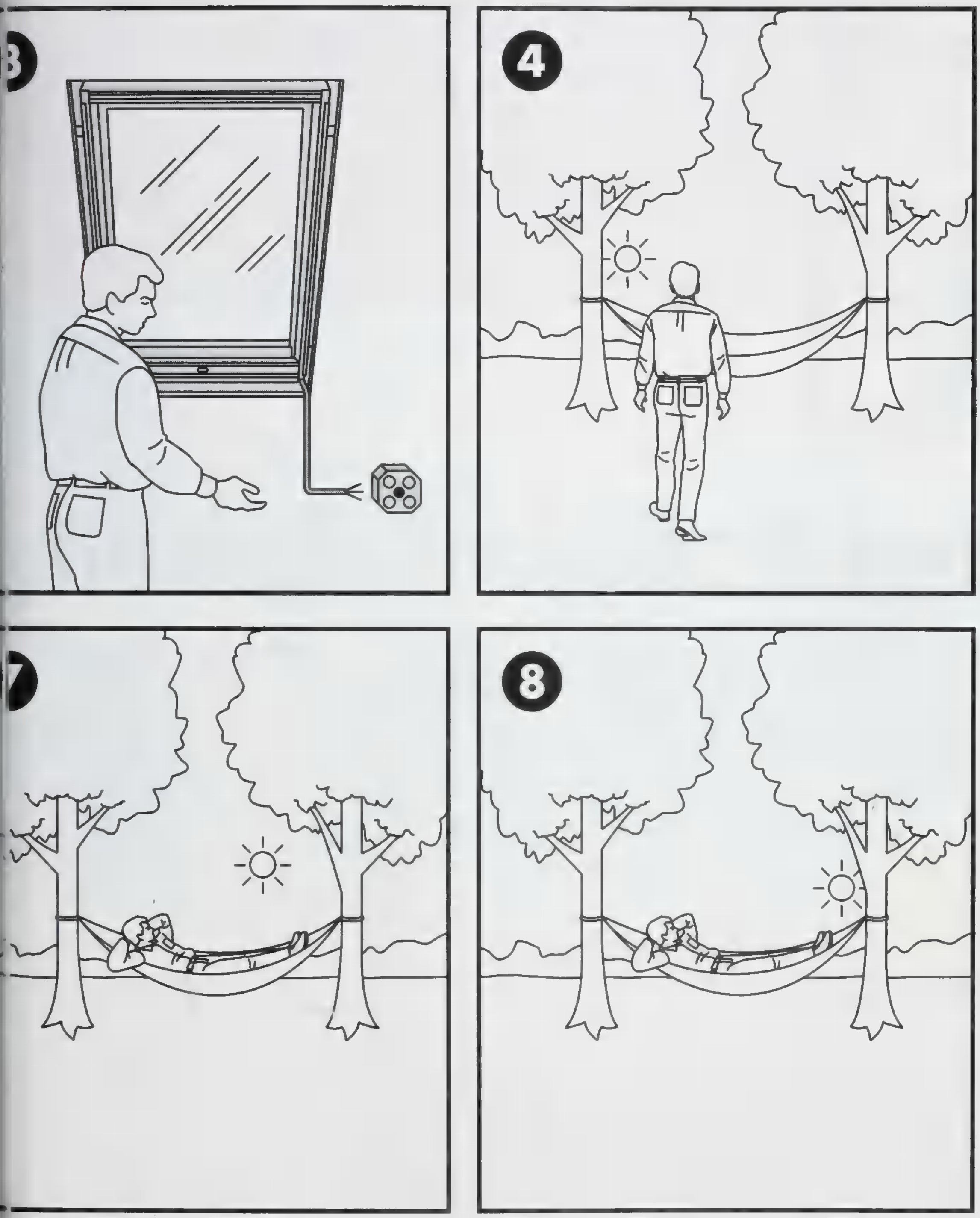

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CIRCLE 113 ON INQUIRY CARD

Lessons from America's Best-Managed Firms

PART3

Marketing Today: Balancing

By Jane Kolleeny and Charles Linn, AIA

Marketing and communications in architectural firms have been profoundly influenced by the phenomenal growth of the Internet. We now see firms performing considerable market research online and using their Web sites to attract potential clients. Their geographic reach has been vastly expanded, so that a two-person firm can appear to be a 200-person firm. People are bypassing conventional information sources for the convenience and speed of the Internet: Notices for upcoming projects and awards programs are announced on Web sites; online architectural Web-zines are proliferating; and e-mail has become the established form of communication for almost everyone. As a paperless, timesaving vehicle for giving and receiving information, the Internet has changed the way marketing people do their work, but it hasn't lessened their importance.

We don't think we'll ever see clients who actually buy architectural services online, any more than they would from a telemarketer. "If that happens," says Lisbeth Quebe, director of marketing services at RTKL in Chicago, "we've sunk from being an idea-driven service to a mere commodity." While the Internet, which has forever changed the way services are sold, demands the attention of marketing people and architects alike, it still has its strengths and weaknesses. In this final installment of our marketing series, we address this subject, as well as the issue of finding and training qualified marketing staff and understanding the strengths and weaknesses of the marketing education offered to the current generation of architects.

Your Web site and Internet resources

The reality today is that if your firm does not have a Web site, you don't exist. If a potential client knows your name, he or she is likely to look first on the Web before contacting you. Cynthia Kracauer, managing principal in Swanke Hayden Connell Architects' (SHCA) New York office, says, "Historically, architectural firms have had their work exposed most publicly through specialty publications. The Internet creates a platform where even a sole practitioner can gain worldwide exposure for his or her work."

As a business investment, the establishment of a Web site is one of the most cost-effective marketing tools available to a firm in terms of reach and exposure to potential clients. It works 24 hours a day, seven days a week, 365 days a year. It allows others to learn about your

INTERNET-BASED TECHNOLOGY HAS BECOME DE RIGUEUR FOR MARKETING, AND THERE IS MUCH TO KNOW ABOUT IT. YET, IN THE FORESEEABLE FUTURE, THERE IS STILL NO SUBSTITUTE FOR SHARP MARKETING STAFF. WHY IS THERE SUCH A SHORTAGE OF THESE PEOPLE, AND HOW DO YOU FIND THEM?

People and Machines

THE REALITY IS THAT IF YOUR FIRM DOES NOT HAVE A WEB SITE, YOU DO NOT EXIST. YET, EVEN SOLE PRACTITIONERS CAN GAIN WORLDWIDE EXPOSURE FOR THEIR WORK.

firm at their leisure and is one of the most polite, noninvasive forms of marketing today.

According to Elizabeth Geary-Archer, president of Out of the Box Marketing Strategies in New York City, "The perfect Web site will be easily updated in-house; it will contain a resource library of information that could include discoveries, case studies, new products, and/or creative solutions that are useful to your clients; recent news about your firm; a recruitment page; a referral form for those who would like to receive information about you; a page for projects that will soon be bid; a portfolio of past and current work; and a password-protected portal to access an intranet/extranet site where clients can view the progress of their project, consultants can make updates, and projects are managed and documented."

As a communications vehicle, the Internet is limited by its immense size and content. How does a firm grab an audience when the audience and competition are unfathomably huge? Geary-Archer suggests spending minimal time registering your site on search engines, focusing instead on listing your firm in directories, or placing links to your site in strategic locations on the Internet where your clients may look. Focus on building an informative Web site that clients will return to again and again.

Steve Goldberg, FAIA, partner at Mitchell/Giurgola Architects of New York City, says his firm's Web site seeks to establish interactive Web relationships with clients and to employ the advantages of Web media. "By linking the projects on our Web site to the client's Web site, we allow potential clients to better understand the context of the building. Similarly, a potential client searching our current clients' Web sites will be linked to our site, where they will see further examples of our work." Mitchell/Giurgola uses Web-media exposure, encouraging readers to explore the subject of an article in greater depth by following links, embedded in the text, to the firm's Web site.

CAVEAT: Although a Web site has great potential as a two-way custom communications tool for firms, many remain one-way mass communication vehicles. Karen Courtney, director of marketing at NBBJ in Seattle, points out, "The next challenge in making a firm's Web site an effective marketing tool is to understand a few specific objectives that your audience wants to achieve and respond to them exceedingly well. This means sharing ideas, having opinions, and creating useful information for your audience, not just posting project information." Nancy Fishman, marketing principal at Zimmer Gunsel Frasca Partnership, in Portland, Ore., echoes the sentiment: "We all need to remember that in a world already overwhelmed with information, the solution is not to shout more and louder, but rather to focus the message and the audience."

Getting work electronically

Particularly among institutional clients, Web sites are becoming the most widely used means to communicate with architects and consultants interested in working for their institutions. Such clients conduct consultant prequalification processes electronically and request that proposals be submitted via the Web; they outline their capital campaigns and building projects. Some describe what projects are under way and upcoming; others publish shortlists and winning firms or illustrate the status of work in

Web hints for architects

By Guy Esberg

1. Develop your site design with the Web in mind. A beautifully printed graphic design can be disappointing as a Web site, since the Internet is inconsistent with traditional graphic-design parameters, such as colors, fonts, and the high resolution that graphics and photography demand.

2. Test your site on the most popular screen sizes (15, 17, and 19 inches) and commonly used resolutions. Color and contrast can range significantly. Also, there can be pronounced differences between Macintosh and PC systems, even with the same monitor.

3. Test your site on the most popular browsers, such as Microsoft, Netscape, and AOL. The look and performance can differ radically from browser to browser, so don't expect that others will see what you see.

Guy Esberg is a marketing consultant with his own firm, Guy Esberg & Company, in Marin, Calif.

4. Design your site to work well for users with slower connections. A number of people still use dial-up modems, and corporate users with T1 or T3 lines are often saddled with slow performance due to heavy volume on their networks.

5. Keep your files small—the larger your files, the longer they take to load, and the more likely that people will lose interest waiting. Keep your pages and individual graphic images as simple as you reasonably can.

6. Avoid unnecessary plug-in software. Unlike casual and consumer Web users, business users want fast, easy-to-access information. Plug-ins slow down the user, take extra hard-drive space and memory, and users without the plug-in or the version you've used will have to download new software. Considerably interesting and useful effects can be achieved without plug-ins.

7. Choose a Web host with the speed and storage capacity required for your current and anticipated needs. Look for around-the-clock technical support, a client control panel, and the ability to download reports on your site traffic.

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progress. For an example of such a Web site, see the University of Connecticut's at www.aes.uconn.edu.

Today, architects can assemble an "electronic slide show" of their work to respond quickly to busy clients, and some are using the Internet to transmit e-brochures and online "light-box" presentations to potential clients. Ron Worth, executive vice president of the Society for Marketing Professional Services (SMPS), notes that both DesignArchitecture and Arkropolos are consultancies that assist firms in automating this process. He says, "I can't help but feel this is the start of a significant way of accelerating the way we do business."

One firm that makes use of e-brochures is the Dirsmith Group of Highland Park, Ill. They send out monthly e-mailings to their client list, with links to images of specific projects on their Web site, an extremely efficient, cost-effective, and immediate way to reach people with special news items. With research, the firm developed a method for quick downloading of images, text, and graphics so that busy clients need not wait long.

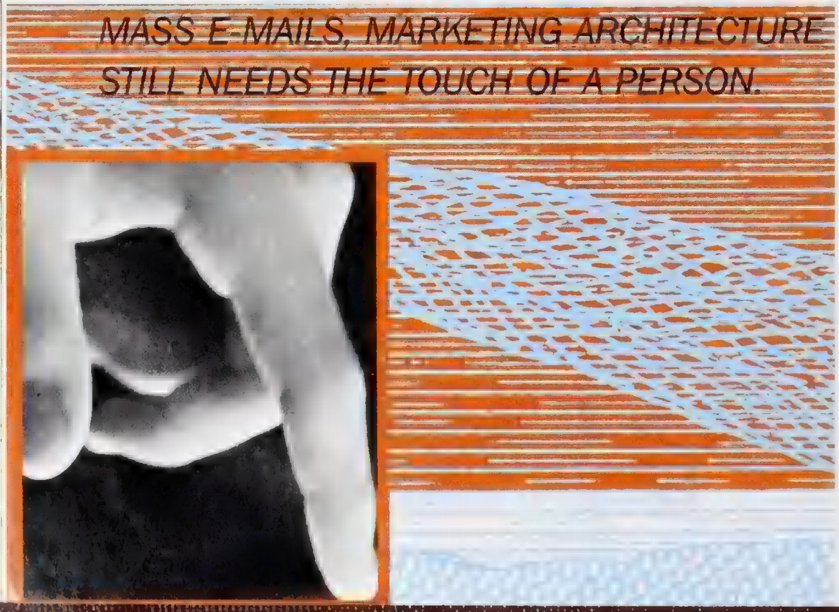
Doing research on the Web

The Internet has revolutionized market research with instant information about potential clients; construction, economic, and market trends; and the competition. "You can get a taste of an organization's culture, values, services, products, and structure from looking at its site, where you will often find key members of the organization listed, as well as contact information," says Richard Staub, marketing consultant in New York. Also, a firm can research awards programs, industry events, postings of leads for new work, and e-publications that provide industry news and information. Many industry Web sites provide links to sites of related interest, which can be helpful.

Finding and hiring marketing staff

Regardless of digital wonders, architecture is still a person-to-person business. But have you tried to hire any marketing staff lately? If the answer is no, you're lucky. It's not a jungle out there, it's a desert: Finding a trained marketing professional in the field of architecture is a bleak prospect. And, it's a very small desert to boot. Before you even officially have an opening, you can be sure the information has beaten you to the street—as fast as it takes to tap out an e-mail. Marketing professionals are already evaluating what they've heard about the relative pros and cons associated with working for your firm. One large, well-known national firm is quietly known among marketers as the firm that "eats" marketing directors—and marketers generally give it a wide berth. So, what gives? Why is good staff so hard to find and why is turnover so high?

LEST WE FORGET, IN THIS AGE OF WEB-BASED PROPOSALS, CELL PHONES, AND MASS E-MAILS, MARKETING ARCHITECTURE STILL NEEDS THE TOUCH OF A PERSON.



First, marketers are hard to find because there is no formal career track for them. Sure, organizations like SMPS, Professional Services Marketing Journal (PSMJ), ZweigWhite, and others offer training courses and books, and local consultants offer seminars for marketing coordinators. Recently SMPS even launched a professional certification program, which will help employers identify marketers who possess the required skills to excel in their positions. This certification also helps marketers maintain and increase their skills and subsequent value to the firm through continuing-education requirements. But it is difficult to find a single institution of higher education that offers a program in professional services marketing. Second, many qualified marketers leave architecture for more money or for a work environment where they don't face the obstacles traditionally associated with architectural offices [see "Marketing: Part 1," FEBRUARY 2001, page 66, and "Marketing: Part 2," MARCH 2001, page 76].

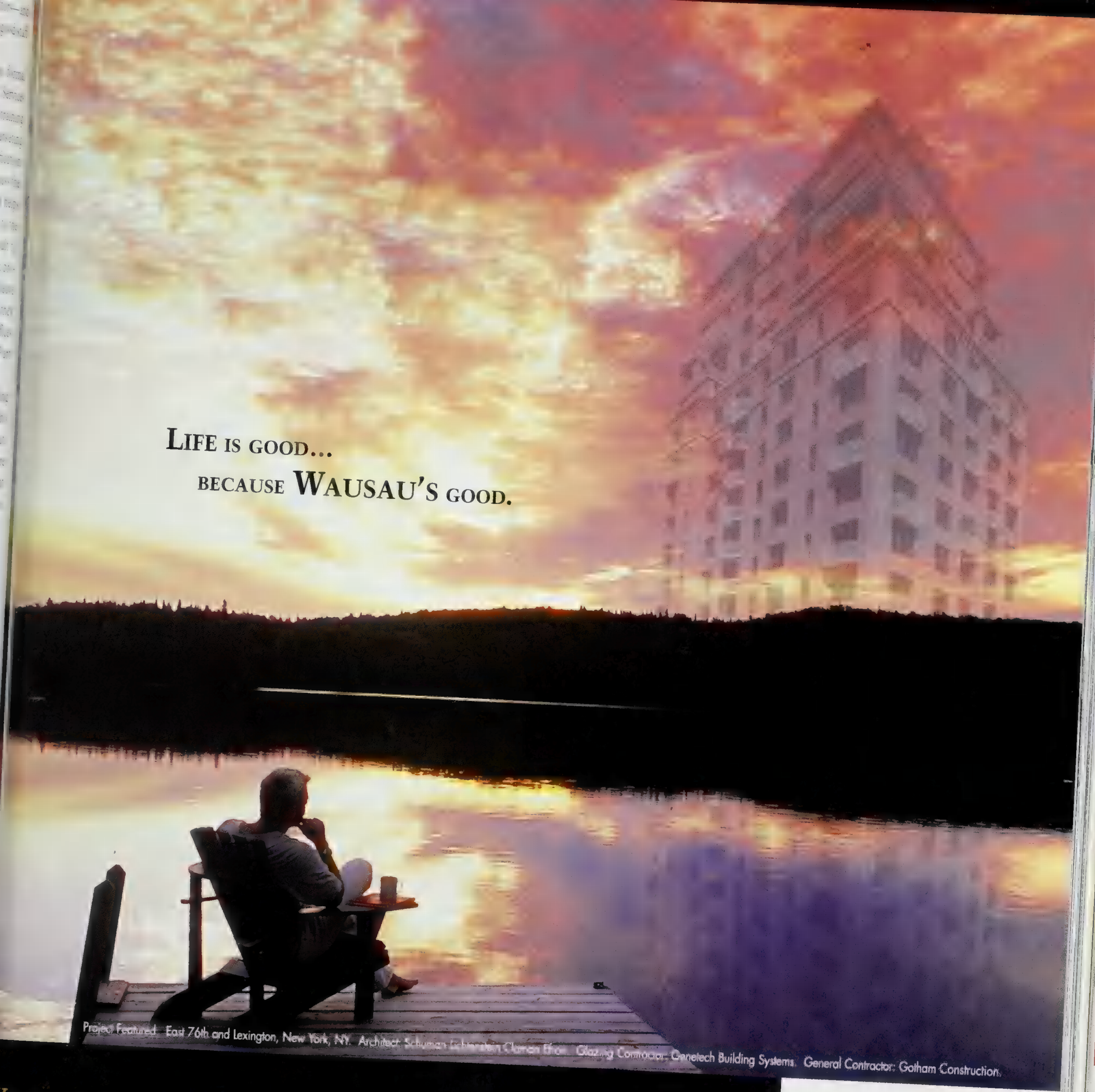
Another reason is suggested by Sharyn Yurio of the Marketing Partnership of New York and New Jersey. "My guess is that people who have stable situations with successful marketing efforts are staying put. Remember that whenever the economy slows, the marketing people are the first to be let go. Of course, getting rid of the marketing department can lead into a spiral of failure if there are no technical people ready to pick up the slack or if the economic slowdown becomes severe."

If you are in need of marketing staff, there are a few resources out there. SMPS and the AIA have national and local Web sites where you can advertise an opening, and other Web sites serving the design field, including this magazine's, post job openings. Some firms advertise in the local classifieds, of course. Possibly the most successful method, though, is simply to get the word out that you're looking. Employers and headhunters will obtain names of marketing directors or coordinators from the SMPS membership directory and call to see if they will respond to an offer. The marketers then evaluate its appeal and decide whether to respond to it themselves, pass it along, or simply dump it.

Veda Solomon of the Marketing Partnership advises principals of design firms to hire young people with excellent computer and communication skills and train them. Another practice is to hire marketing people from other industries. This strategy can often bring a fresh, unique perspective, although marketing professional services is not at all like most other forms of marketing. It is also possible to hire an outside consultant for a particular set of tasks; there is a proliferation of freelancers who have made the break from a nine-to-five routine. Unfortunately, only a few marketing tasks are suitably performed in this capacity [see "Building Your Firm's Incredible Marketing Machine," FEBRUARY 2001, page 79].

Mark Zweig of ZweigWhite advises hiring marketing staff with a classic marketing background. "Learn from the consumer product marketers," he says. "There is a body of knowledge on [marketing] just like there is on how to design a hospital or an HVAC system for a restaurant." Another approach comes from Christa M. Mahar, director of marketing at Graham Gund Architects, in Boston, who suggests hiring those with a strong writing and/or theory background, rather than someone with a design or marketing degree. "Those who come to marketing with a strong graphics background can also do well," she says. But the bottom line is, if you're looking, get in line and be patient.

Because there is no set career path, all kinds of intelligent people from different educational and career backgrounds may find success. Kelly Dougherty, director of strategic development at Lehman Smith + McLeish, in Washington, D.C., decided on a joint M.B.A. and architecture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degree program before working in an architectural firm. She says, "I knew that the management option of the architectural program would provide me with some business knowledge, but I wanted more. I hoped the M.B.A. program would help me be a successful project manager instead of a designer. However, upon beginning my course work, I quickly realized the complexity of business and that a very high level of understanding would be necessary to succeed. My original goal of project management changed to marketing and strategic planning."

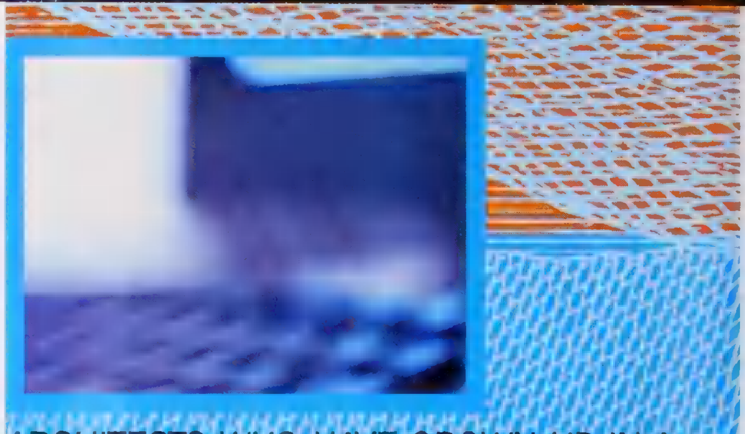
Lori Ann Worthington, marketing director at Hart Freeland Roberts of Brentwood, Tenn., has yet another story to tell. Her education was in psychology and communications, and in her first job she represented a nonprofit regional council that allowed her to develop close ties to local elected officials and learn about the process of designing and building by acting as an owner's rep. What a beautiful segue into the marketing and sales arena. In addition to the usual marketing tasks, her responsibilities include acting as a liaison between client and architect until the completion of the project, participating in feasibility studies and programming, researching policies and funding sources for the client, and conducting client interviews on project team performance. Her background in communications and psychology attunes her to the needs of her firm's clients, whereas architects are more likely to focus on technical matters.

Educating young architects in marketing

These days, most architecture schools offer courses on professional practice, which encompasses the study of marketing. The AIA, NCARB, and NAAB do not have specific statistics about what these courses include, but we did uncover some eye-opening, though anecdotal, information from Dennis Astorino, AIA, who chaired the steering committee for the Architecture Practice Analysis Study, conducted by the National Council of Architectural Registration Boards (NCARB). In their 18-month investigation involving focus groups of 110 practitioners, including interns, newly registered architects, and educators, they discovered that architects are generally unable to communicate what they do for their clients, nor are they being taught to do so. Communication skills—an integral part of the marketing function—have become a sorely missing part of architectural practice. Clients sometimes have no idea what responsibilities their architects have taken on, even after they have been hired, which is a leading cause of malpractice litigation [see NOVEMBER 2000, Practice Matters, "Managing Your Practice to Reduce Professional Liability," page 57]. Astorino says communication skills should receive more emphasis at architectural schools.

On the bright side, the new generation of architects is not being educated under the cultural stigmas of the past, when architects were first barred from marketing and later viewed it as detrimental to the integrity of the profession. These days, marketing is part and parcel of our young architects' everyday thinking. They've grown up in a time when their lives are saturated with it. They know, for example, that no product appears in a movie unless it's part of a merchandise tie-in. They know that the Nike Swoosh trademark doesn't appear on college athletic teams' uniforms because it is pretty but because they've been paid to wear it, so Nike can build its brand. Young architects have grown up in a time when only those who sell survive. We see they are much more accepting of the realities of marketing—and more savvy about it—than any generation before.

The New York City firms Work and ARO (Architectural Research Office) illustrate the acceptance of marketing as a necessity in these terms. Both have full-time marketing staff even though they have fewer than 20 employees. Rachael Gray of Work says, "We place a high value on marketing and PR, not just so we can get projects but rather to hone in and seek culturally significant work that is meaningful to our staff." Stephen Cassell, cofounder of ARO, says his firm wants its "innovative work to attract clients." But even most creative work won't bring clients in the door if people don't know about it. Small firms must work especially hard to get the word out. "We spend time making sure every project is well documented," he says, "for publications, lectures, and our portfolio—this is the best way to reflect the quality and type of work that we do."



ARCHITECTS WHO HAVE GROWN UP IN A TIME WHEN ONLY THOSE WHO SELL SURVIVE ACCEPT THE REALITIES OF MARKETING AND ARE MUCH MORE SAVVY ABOUT IT.

How marketing is handled at architecture schools

Many instructors invite an architect or marketer to present a series of marketing lectures. Other professors have devised approaches that better approximate what students will face when they go into practice.

Stephen Kliment, FAIA, a former RECORD editor, is an architectural journalist and adjunct professor at the School of Architecture, Urban Design and Landscape Architecture at City College of the City University of New York. He teaches a course on written and verbal communication skills, which he says is really a marketing course. At the beginning of the term, he assigns a fictional design problem in which the students must first win the commission. They write a snappy marketing letter to the selection committee, followed by a proposal and interview. Next students write a feasibility report on the program and in due course make a design presentation to the client, with each student defining and defending his or her main approach. This stage is followed by correspondence with the client, a letter to a magazine editor proposing coverage, a submission to a design awards program, and so forth. Later on, the class reviews and critiques the Web sites of several firms.

Tulane University currently offers five professional practice courses, which have high enrollments and waiting lists: Over the past several years, student interest has noticeably veered toward the practical, according to Elizabeth Burns Gamard, both an associate professor and associate dean of the School of Architecture at Tulane. "Students find that their abilities translate into areas far beyond the limits of their elders. Marketing becomes a tool with which to assert, develop, and frame these many possibilities." As part of one course, Tulane students develop and design materials for their own "projected" firm; this entails establishing a firm name and mission statement, designing a logo and marketing materials, and writing the text. It is the highlight of the course.

Brian Schermer, AIA, of the School of Architecture and Urban Planning at the University of Wisconsin-Milwaukee, currently teaches professional practice and design studio. "In class, I highlight the importance of client relationships. The old saw 'Cultivate clients,

(continued on page 386)

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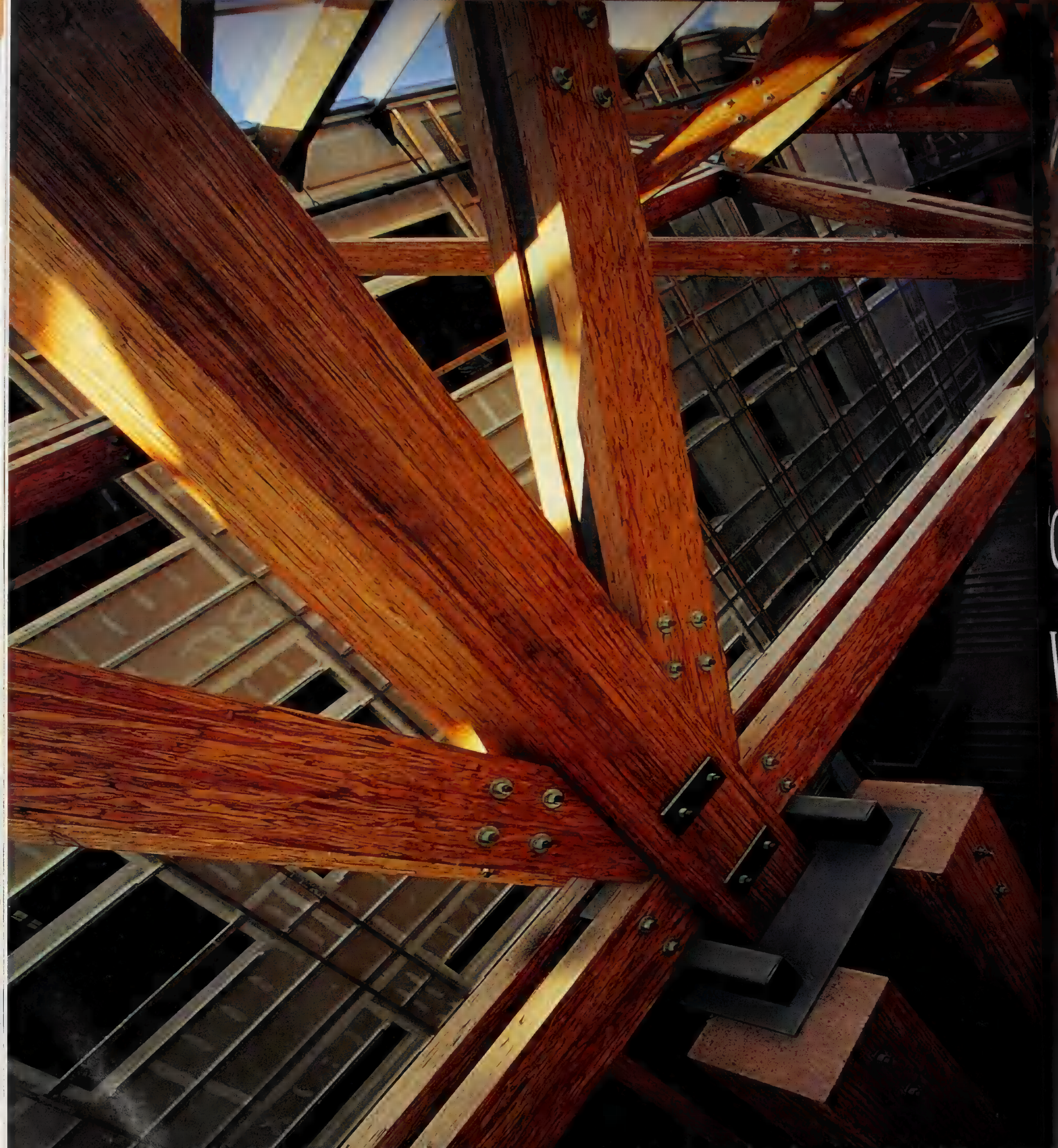

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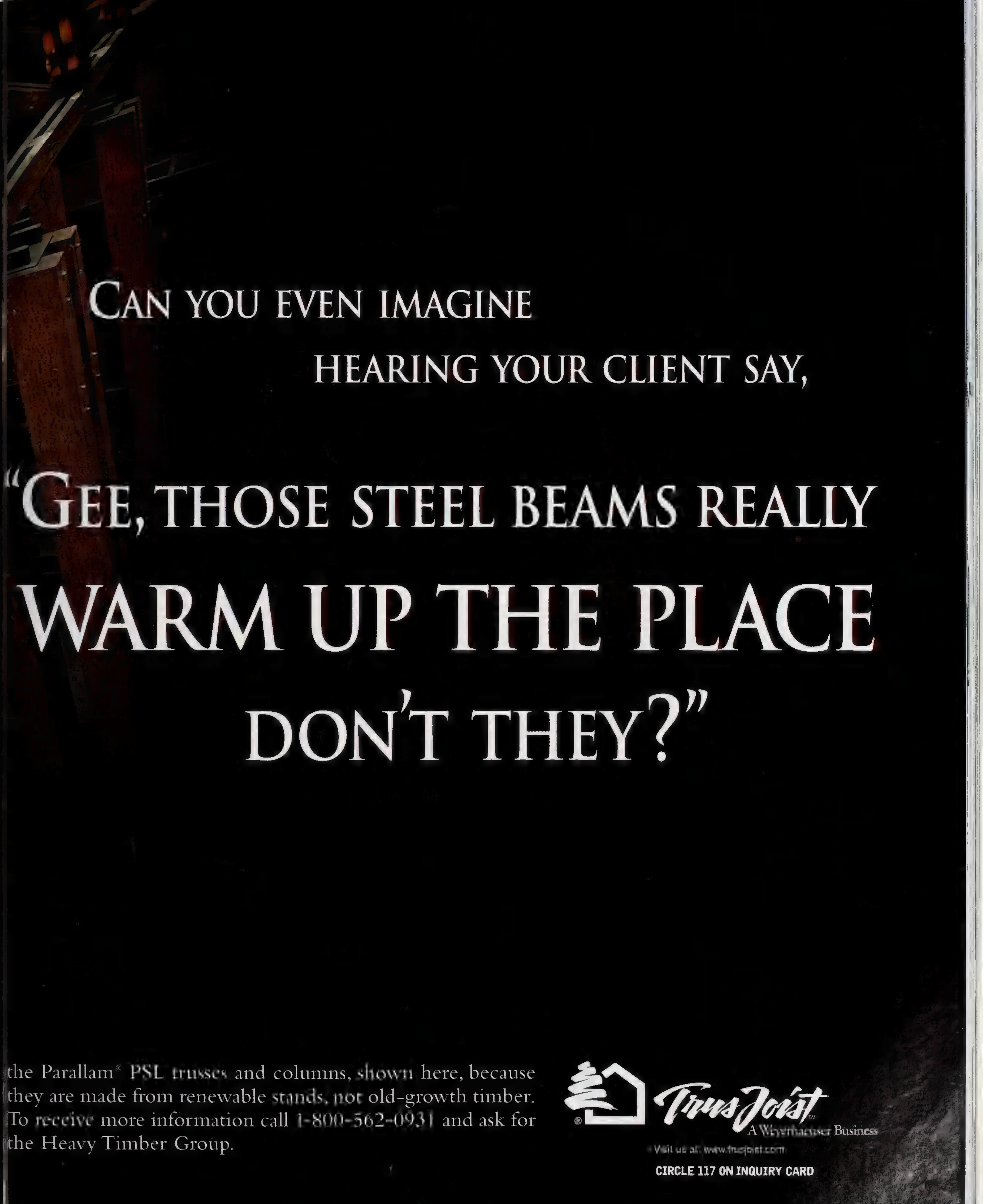

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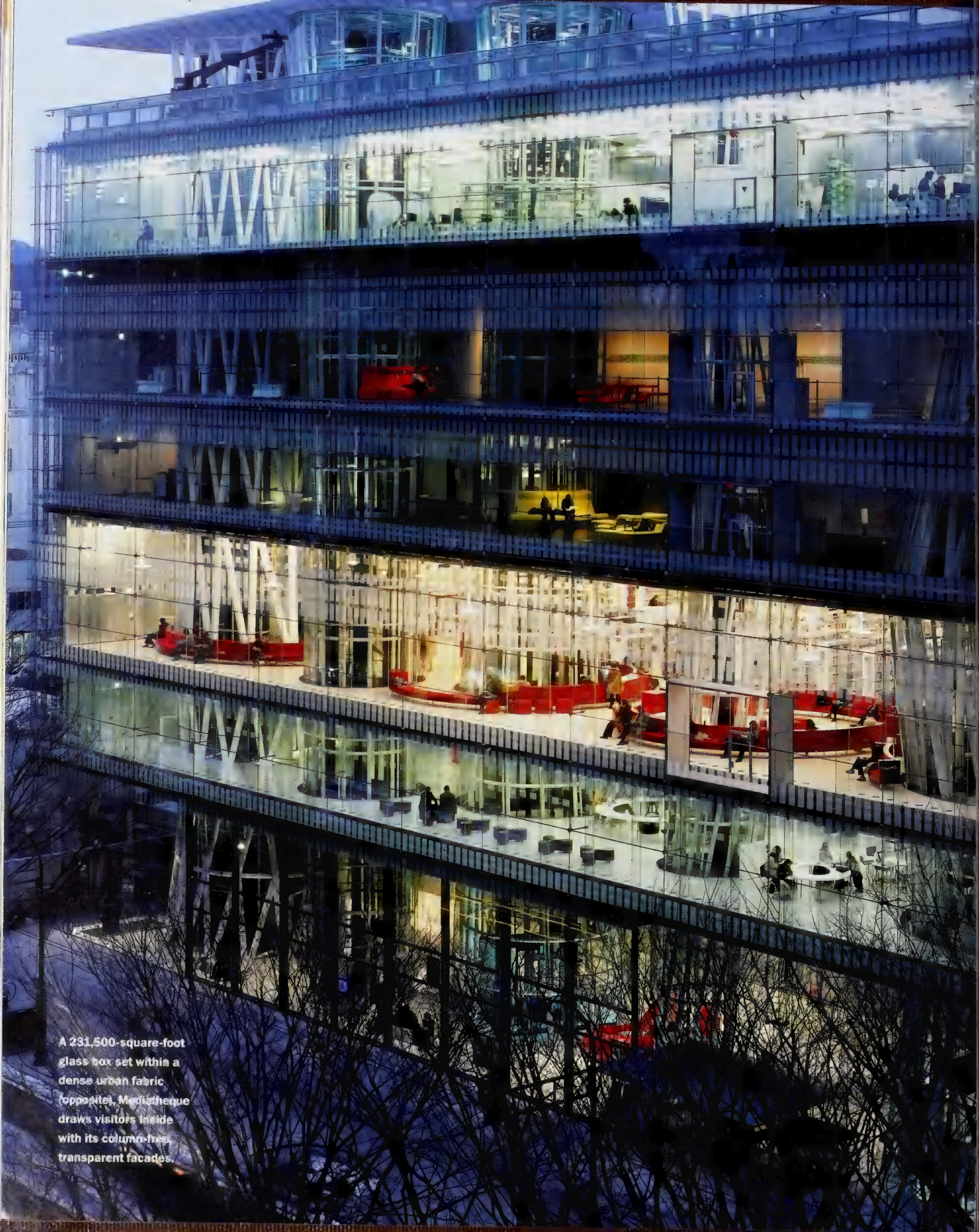


A 231,500-square-foot glass box set within a dense urban fabric (opposite), Mediatheque draws visitors inside with its column-free, transparent facades.

Toyo Ito imagines what the future of information and digital technologies might be, then builds it in Sendai, Japan, at MEDIATHEQUE

By Naomi R. Pollock, AIA

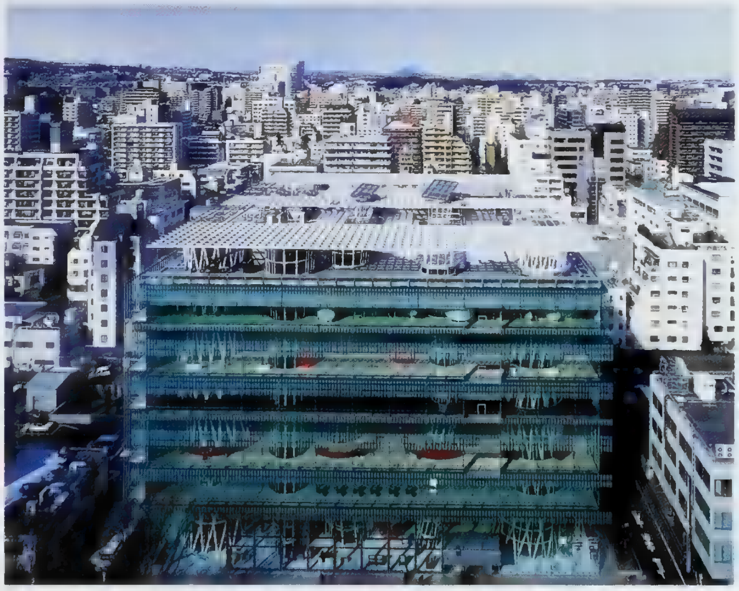
What they sought was nothing short of an entirely new building type for a new age. Reinvent the civic building for an information-hungry time. That was the task Toyo Ito faced when he won an open competition in 1995 to design Mediatheque for Sendai, a regional city of 1 million people 215 miles north of Tokyo. While the city government initially wanted to replace an existing library, as well as gallery space and audiovisual centers at scattered locations, the competition jury, spearheaded by Arata Isozaki, had far loftier goals. What the city got is a composite building, but one that does not look or function quite like any facility the Japanese public has seen before. Opened early this year, Mediatheque boasts an innovative structural system and serves as a place for gathering and sharing information through the latest electronic, digital, visual, and printed means. But its greatest contribution lies in setting higher standards for what meaningful civic architecture in Japan ought to be: monumental yet inviting, technologically sophisticated yet warm and engaging. Such a contribution is particularly valuable in a country that has spent hundreds of millions of dollars over the past decade in an attempt to prime its sputtering economy with major public-building projects.

Mediatheque is urban spectacle at its most refined. Located on a 42,500-square-foot lot in the heart of the city, it has a clear glass facade with a 78-foot-long section of 21-foot-tall operable panels at ground level that open onto Jozenji Street, a six-lane, tree-lined boulevard. The building's other three sides, surrounded by low-scale commercial buildings, gas stations, convenience stores, metered parking lots, and houses, are far less grand. More democratic than bureaucratic, the 231,500-square-foot building draws visitors from every direction with entrances on all four sides. Cars can park in Mediatheque's basement garage, while 100 bicycles can be secured in a covered lot on the ground level just outside the west entrance. More than just a lobby or a starting point for exploring the rest of the seven-story building, the ground floor features an indoor urban plaza complete with a cafe, bookshop, and centrally located 5,000-square-foot "open square" that can be enclosed and used for exhibitions and other presentations.

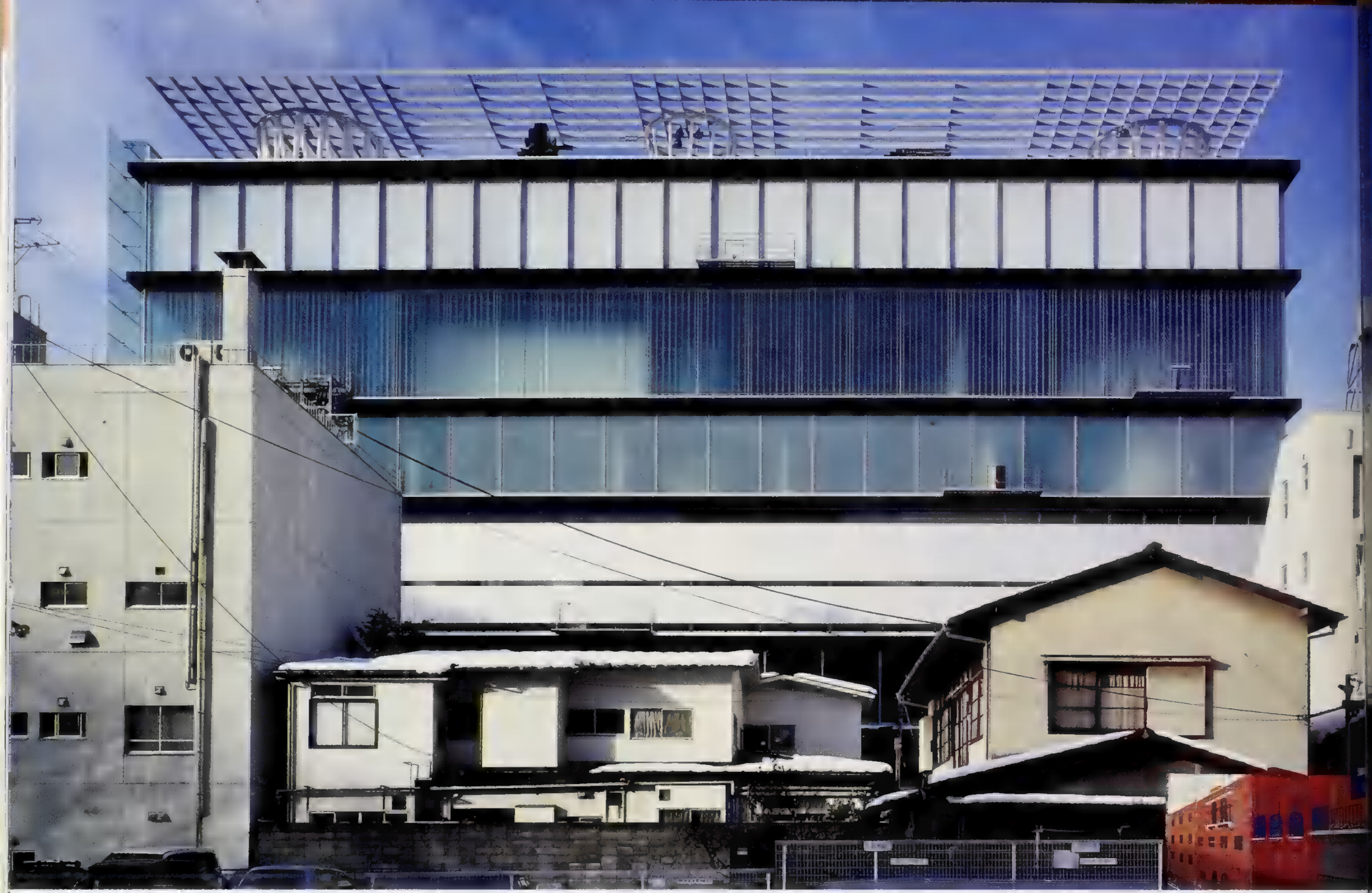
Like a chef assembling shish kebab on a skewer, Ito stacked Mediatheque's various functional components. From the ground floor, all paths lead to a second-floor information center containing loosely designated areas for periodicals and Internet-ready computers, as well as administrative offices and children's book sections separated by diaphanous curtains that keep visual barriers to a minimum. The formal, double-height library, with its casual seating overlooking the street, open stacks for 160,000 books, and quiet study areas at the rear, occupies the third floor, while the reference section fills a fourth-floor mezzanine. A series of small galleries on the fifth floor can be rented by the general public, and those on the sixth floor are reserved for professional exhibitions and performances.

At the top of the building is an audiovisual center where visitors have access to an array of computers, CD players, and DVD monitors arranged in little groupings around the floor perimeter. Floor-to-ceiling glass offers views over the city and to nearby mountains. A 180-seat theater, a conference room, and an administrative area, all ganged together

Naomi R. Pollock, AIA, is RECORD's *Tokyo-based correspondent. She curated the exhibition* Japan 2000: Architecture for the Japanese Public *at the Art Institute of Chicago in 1998 and contributed to its catalog.*



Project: *Mediatheque Sendai, Japan*
Client: *City of Sendai*
Architect: *Toyo Ito & Associates, Architects*
Engineers: *Sasaki Structural Consultants (structural); ES Associates Constructing Engineers, Sogo Consultants, Ohtaki E&M Consulting Office (mechanical); Nishihara Engineering, Hokuei Engineering (plumbing)*
Consultants: *Lighting Planners Associates (lighting); Nagata Acoustic, Nittobo Acoustic Engineering (acoustic); Ataka Fire Safety Design Office, Akeno Sanitary Engineering Consultants (disaster control); Taikisha Ltd., Daiichi Kogyo Co. Ltd., and Atmax Co. Ltd., joint venture (air conditioning)*
General contractor: *Kumagai-Takenaka-Ando-Hasimoto joint venture*



behind a curvy glass partition, fill the center of the floor. Though each level corresponds to a "different mode of communication between people or between people and different types of media," says Ito, within each floor functional borders are blurred and fixed barriers are few.

Hybrid public buildings are not uncommon in Japan, but the process of realizing Mediatheque was unique because programming, design, and construction took place simultaneously, not sequentially. While design professionals, city officials, and concerned citizens were up in Sendai debating what Mediatheque ought to be, Ito was down in Tokyo trying to design it. But even as late as a year before the completion of construction there was no definitive program. "Up until now, with every building I've ever designed I always thought I could see how it would come together," says Ito. "This time, however, there was no telling where the project was going till the very end."

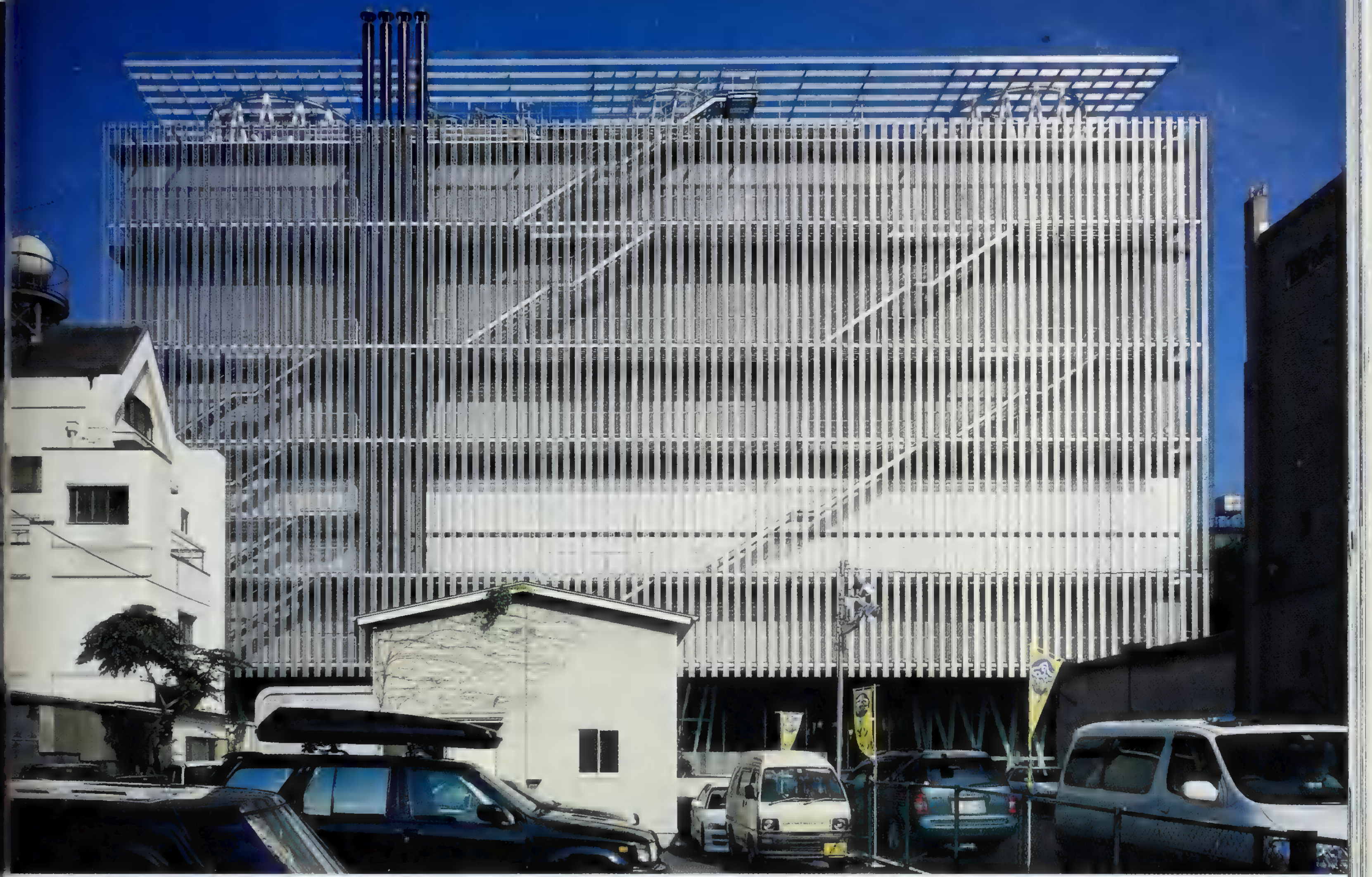
MEDIATHEQUE'S GREATEST CONTRIBUTION MAY BE TO SET HIGHER STANDARDS FOR CIVIC ARCHITECTURE IN JAPAN.

In response to the city's call for a building so forward-looking that no one could quite define it, Ito pared down his architecture to three fundamental elements: plates, tubes, and skin. He developed these elements into a building system consisting of honeycomb slabs, hollow tubes that run irregular vertical courses through the building, and transparent or translucent exterior walls. Interior partitions, doors, elevators, and stairs were plugged in as the project evolved from an abstract competition entry to an actual building. "The intent [of this system] is not necessarily toward an industrial productivity or spatial uniformity, as with Le Corbusier or Mies, but rather toward a site-specific uniqueness," explains Ito.

Visually, Mediatheque's most extraordinary feature is its 13 structural tubes that hold up the entire building. Inspired by the image of seaweed buffeted by underwater currents, the tubes—each differently shaped and irregularly placed—seem to undulate as they thread between floors. As they rise, the tubes contract and expand in width and their center points shift from side to side, causing them to tilt this way and that. The antitheses of conventional solid-section columns, the hollow tubes range from 7 to 30 feet in diameter and are composed of white, steel pipes 5 to 10 inches in diameter, ringing their perimeters. Ito arranged the pipes of the four tubes closest to the building's corners in trusslike triangles to counteract seismic forces, while those of the remaining tubes carry only vertical loads and stand in straight but slanted lines.

Determining the precise profile and position of each tube was a challenging puzzle that entailed balancing structural loads, impact on the surrounding space, and functional roles. From roof to basement, the tubes retain their airy, fluid image, but most double as conduits for vertically circulating air, water, electricity, people, and even light. Capped by rotating, mirrored panels on the roof, two tubes guide shafts of daylight down into the center of the building. But glass encases these tubes and the others that cut through floor plates to create fire separation zones.

Designing the tubes, though, was practically a cakewalk compared to designing the floor plates. Like the tubes, these surfaces are not consistent throughout the building. Composed of two thin steel panels



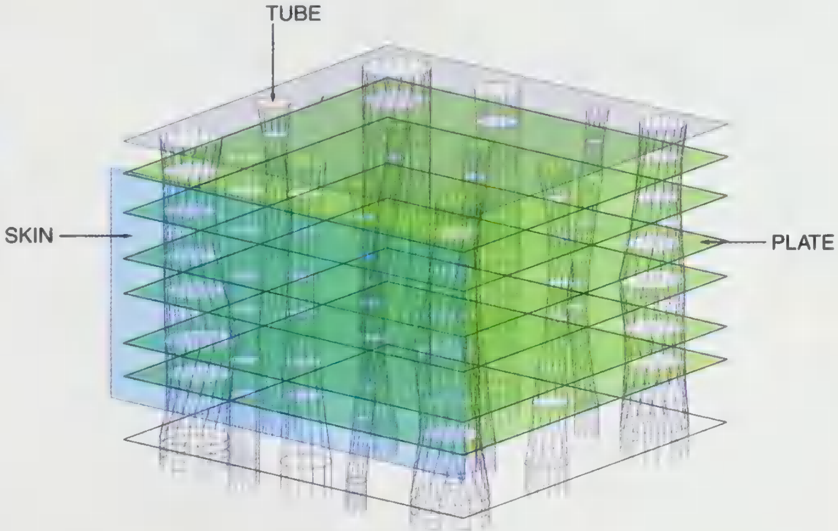
While the main elevation on the south side of the building beckons the public inside, the east (opposite) and west elevations (above) offer varying degrees of privacy and transparency.

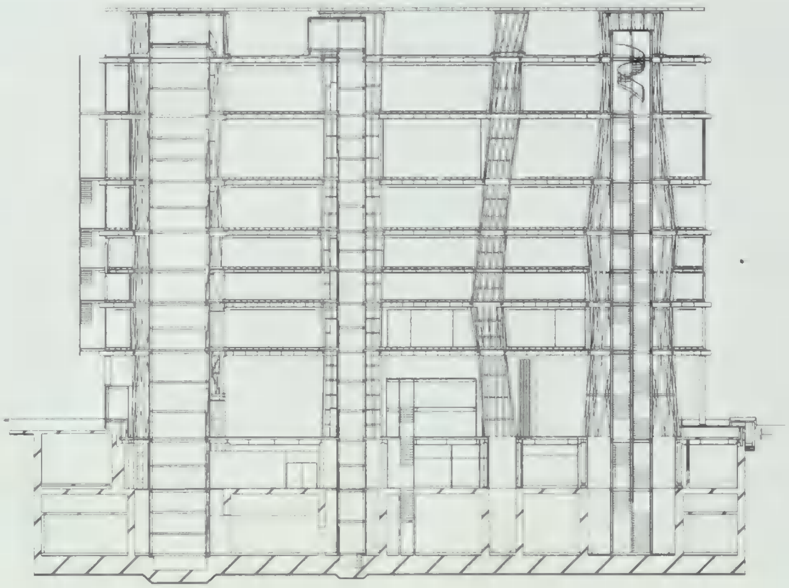
An unorthodox structure

Instead of a typical concrete or steel frame, the architects and engineers devised an unusual structural system that employs 13 bundled "tubes" to support steel-and-concrete floor plates. Wrapping around the entire structure are glass-and-metal skins that allow a high degree of transparency.

Inspired by an image of seaweed swaying underwater, Ito designed the tubes so they change contour and diameter as they move up through the building. In addition to their structural role, most of the tubes also serve as conduits for mechanical systems, daylight, or people. The tubes, which range in diameter from 7 to 30 feet, are made of steel pipes that are 5 to 10 inches in diameter. Floor plates supported by the tubes are made of two layers of steel plate with ribbing in between and three inches of lightweight concrete on top.

Although it required complex calculations and fabrication, the unorthodox structure creates a remarkably open perimeter and flexible interior.

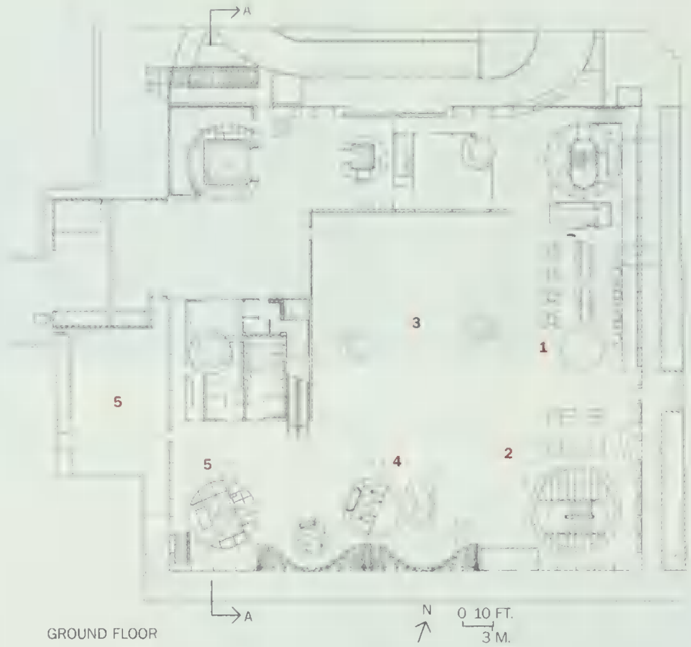




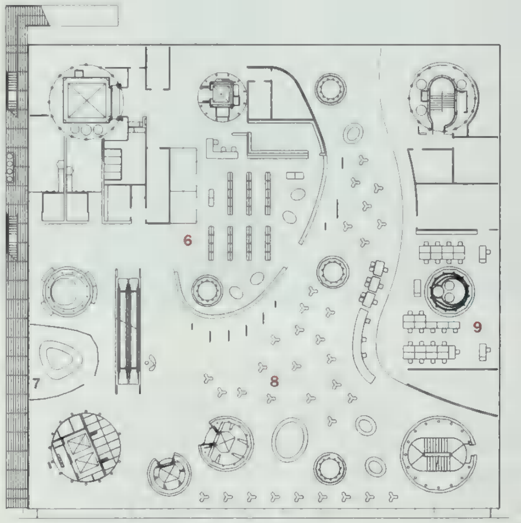
SECTION A-A

1. *Cafe*
2. *Shop*
3. *Open square*
4. *Information desk*
5. *Bicycle parking*
6. *Children's library*
7. *Conference*
8. *Periodicals*
9. *Offices*
10. *Book stacks*
11. *Reading*
12. *Lounge*
13. *Computer studio*
14. *Audiovisual*

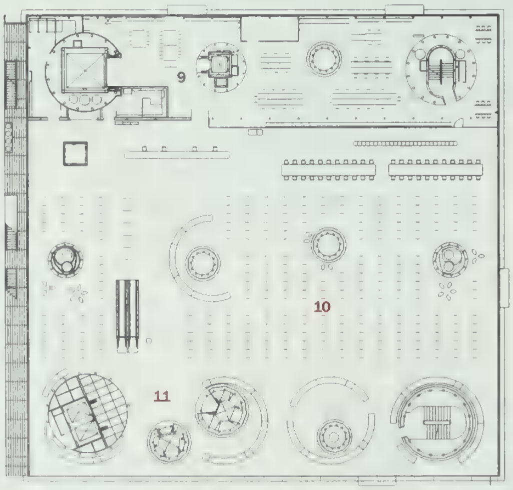
Ito's system of plates and structural "tubes" let him put spaces for visitors along the building's glassy perimeter. Inside, he kept partitions to a bare minimum and used transparent or movable walls to encourage communication between people.



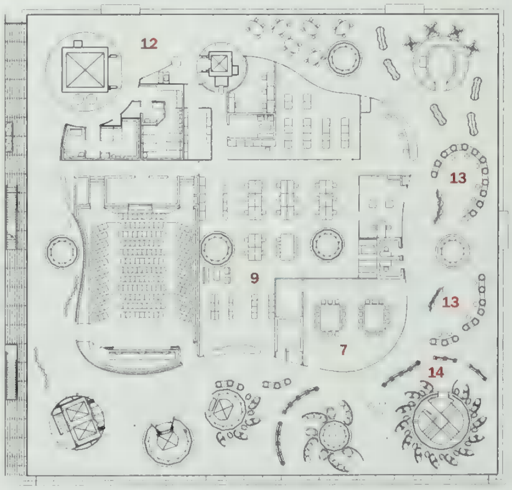
GROUND FLOOR



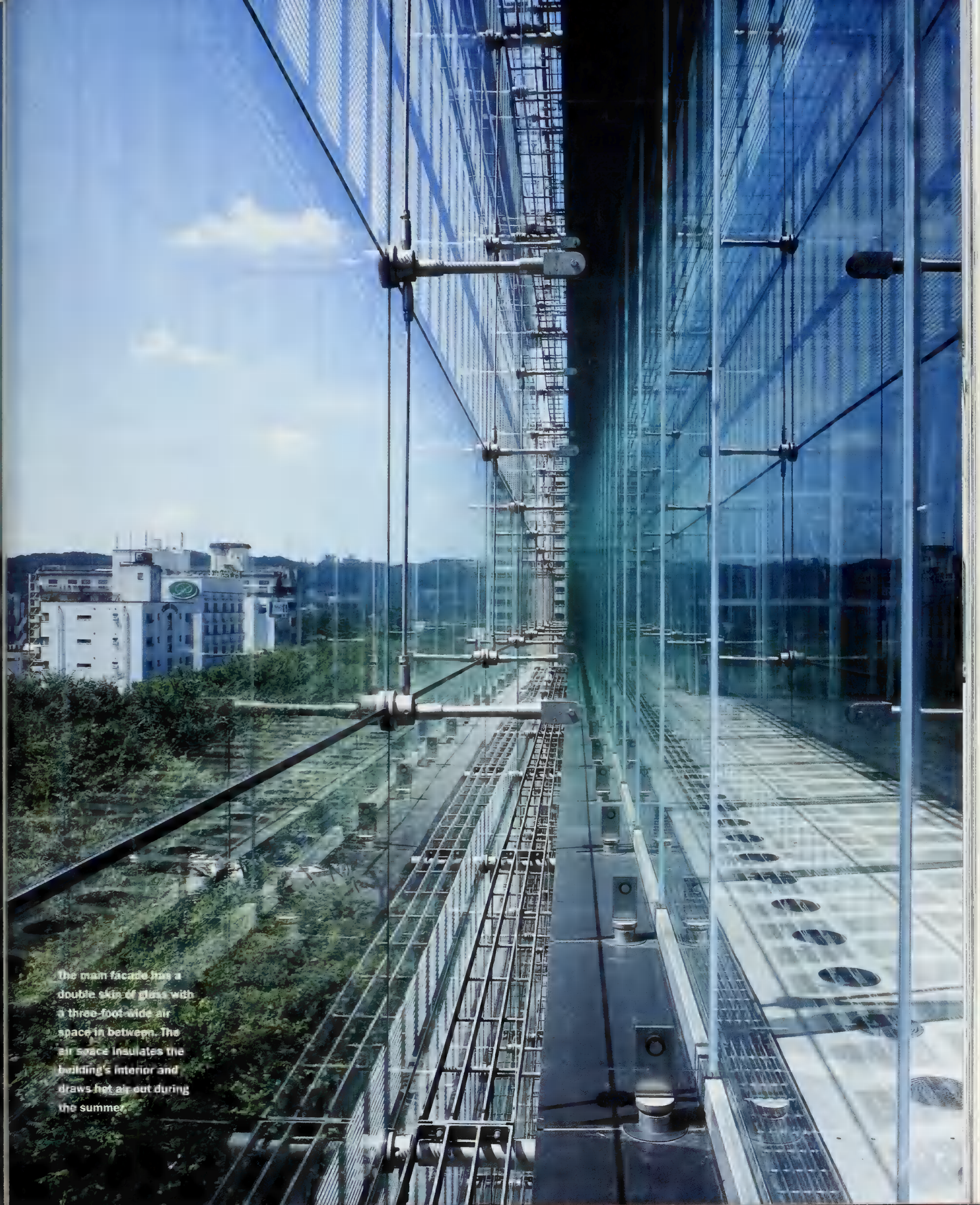
SECOND FLOOR



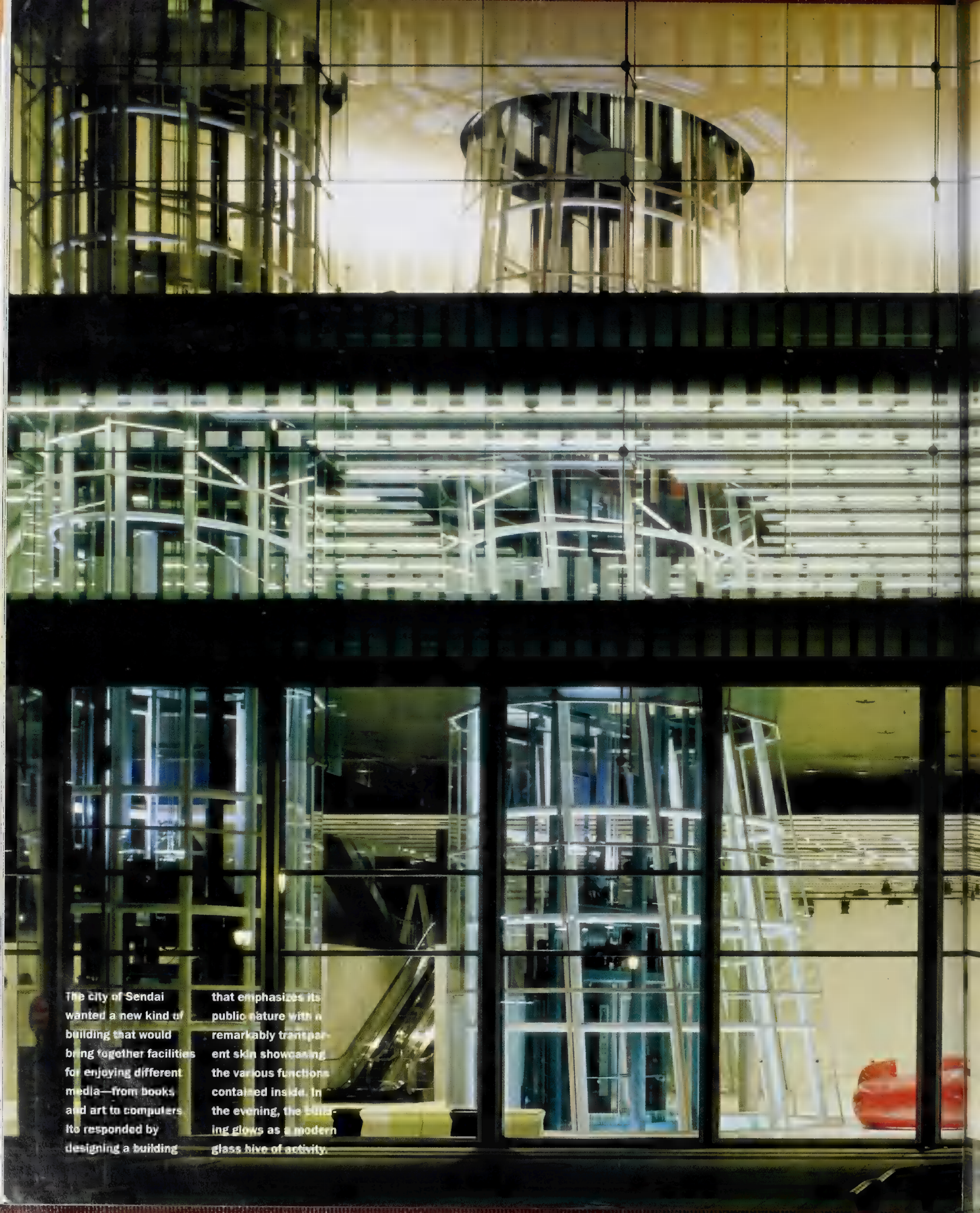
THIRD FLOOR



SEVENTH FLOOR



The main facade has a double skin of glass with a three-foot-wide air space in between. The air space insulates the building's interior and draws hot air out during the summer.

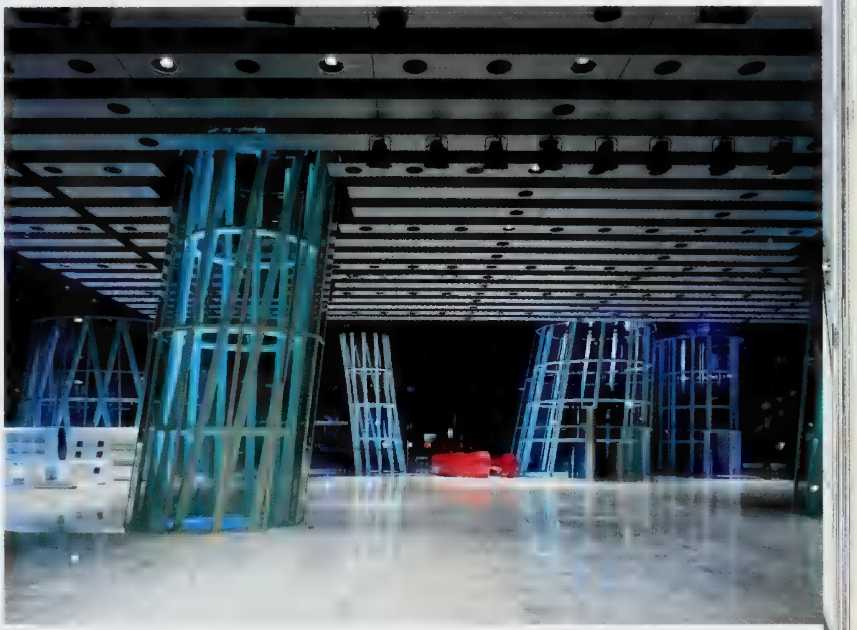


The city of Sendai wanted a new kind of building that would bring together facilities for enjoying different media—from books and art to computers. Ito responded by designing a building that emphasizes its public nature with a remarkably transparent skin showcasing the various functions contained inside. In the evening, the building glows as a modern glass hive of activity.

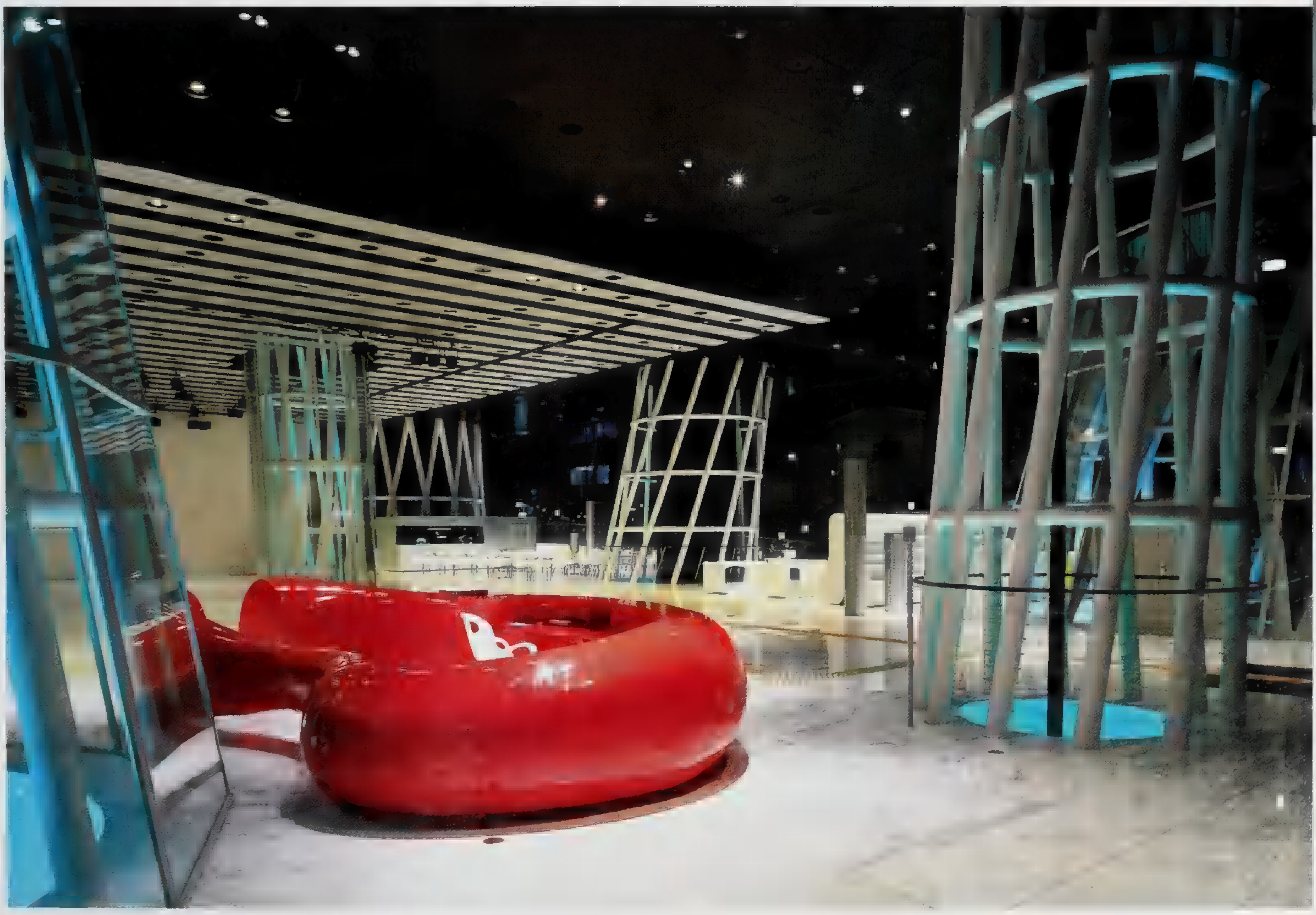
with ribbing in between and three inches of lightweight concrete on top, they can span much greater distances than their concrete cousins. But where the plates meet the tubes, the distribution of forces differs greatly due to the idiosyncratic design of each tube; as a result, the plates' internal thickness varies. The designers rearranged the plates' internal orthogonal ribbing in a radial pattern around the tubes. While these intricate structural calculations could be worked out with exact precision on the computer screen, "the actual site was a raw struggle with steel," says Ito, of a construction process that involved hand-cutting, bending, and welding the heavy metal components made off-site by architectural steel fabricators, ship builders, and industrial steel makers.

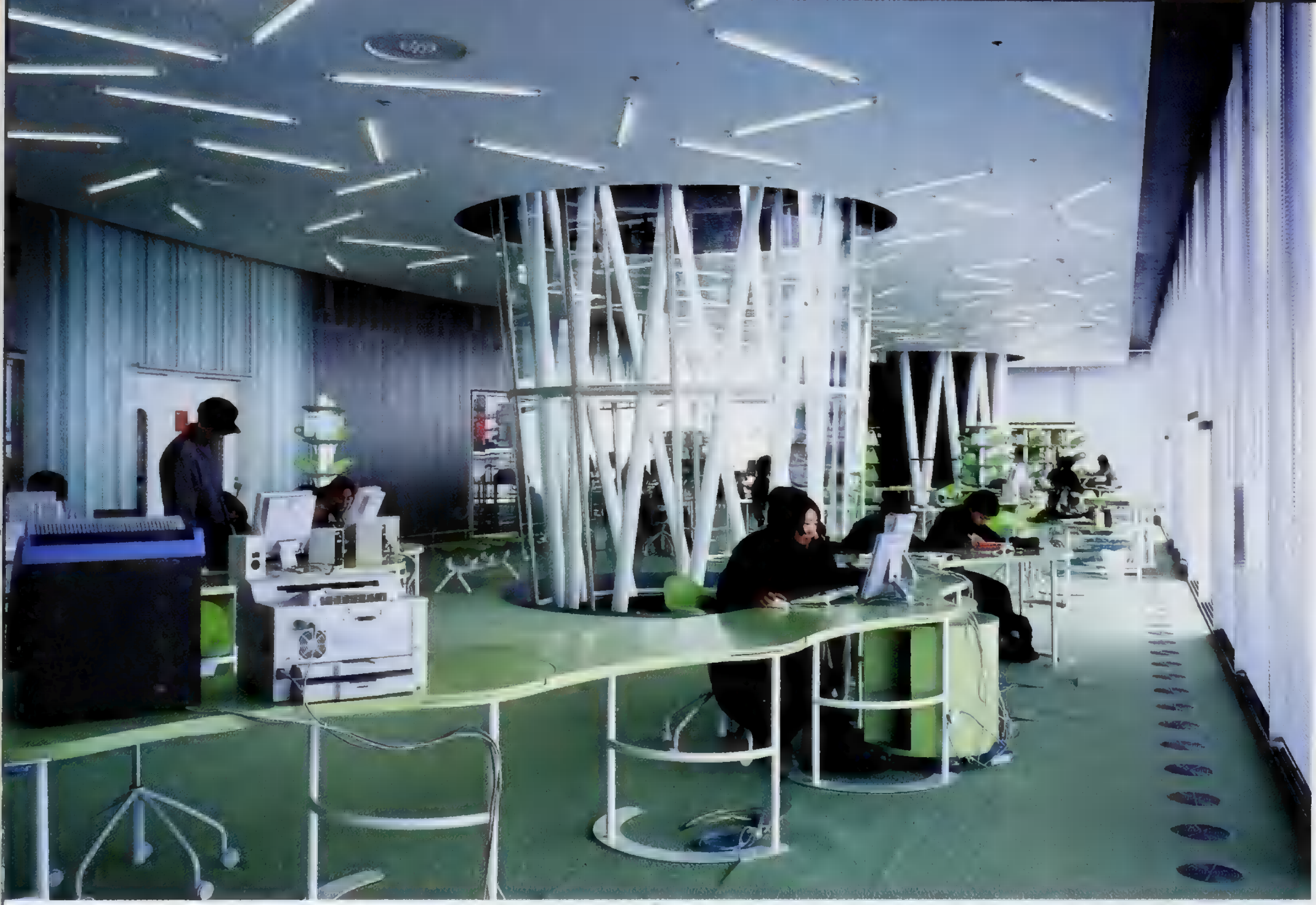
Out of Ito's system emerged a new form of flexible space free from the constraints of structural grids, service cores, and set ceiling heights and animated by the hulking tubes. To take full advantage of this openness, Ito avoided boxy rooms and fixed partitions wherever possible, favoring glass walls, movable curtains, and temporary panels where explicit separations were required. "Designating 'room' spaces specific to functions limits free action," explains Ito. "We want the building to allow users to discover new places and new uses for themselves." For the most part, floor levels are loosely divided into the "differentiated spatialities" that occur naturally where the tubes and other vertical elements are placed in a horizontal field. Unlike most public buildings, Mediatheque has few functional or spatial divisions inside it. Even separations between floors are lessened by the tubes' transparency, which knits levels together with oblique views above and below.

While Mediatheque's transparent or movable walls act something like furniture, its custom furniture—designed by four independent firms—works almost as walls. Architectural in scale, the pieces define and create a sense of place as well as underscore functional distinctions without limiting other possible uses. Kazuyo Sejima & Associates' elliptical tables and wheeled chairs, for example, animate the information center's computer area, and their clover-shaped seating designates the periodical section. In the library, K.T. Architecture's delicate red bench-and-counter units made of wood and steel echo the building's circular tubes and

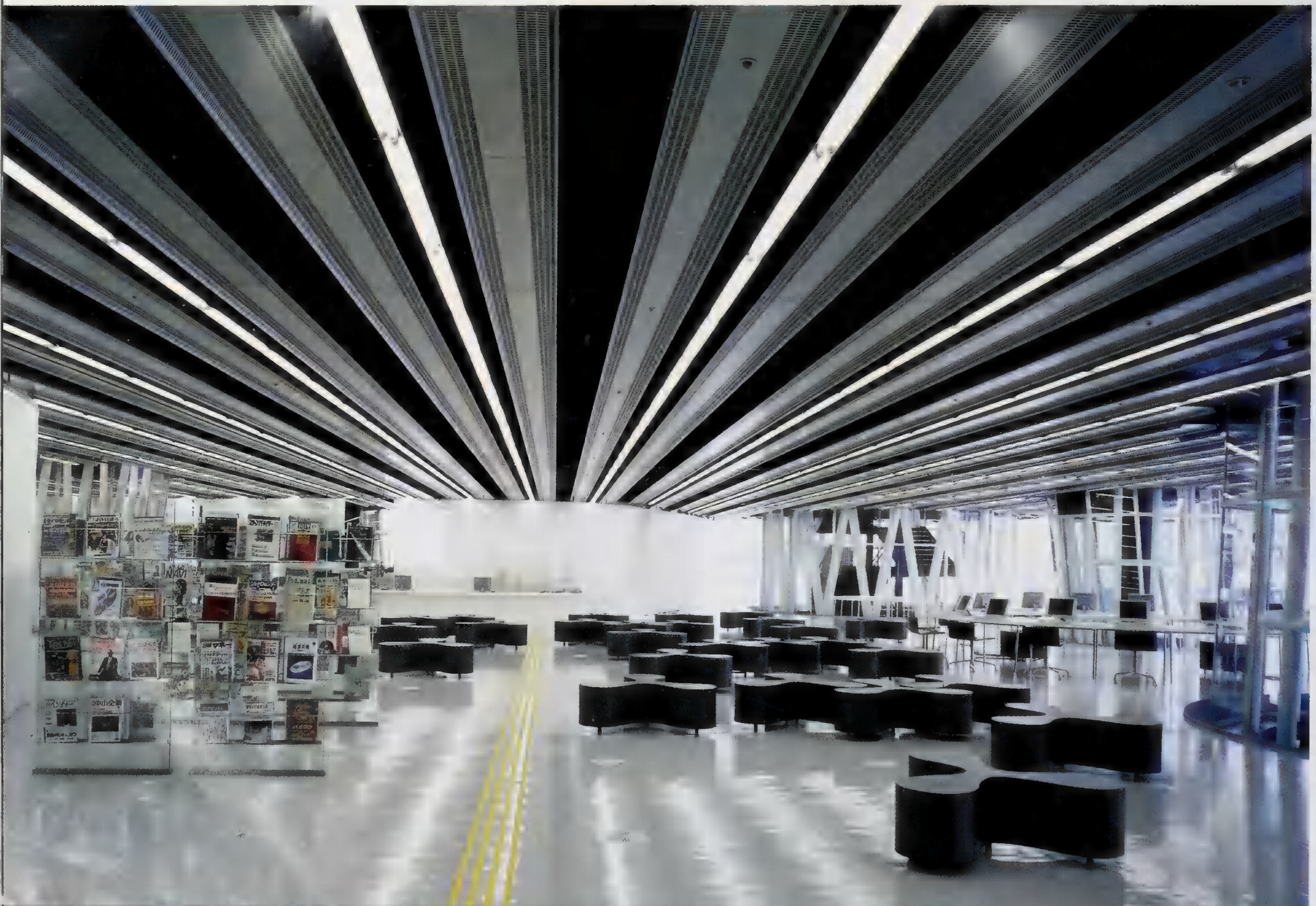


The grand space on the ground floor shows off the building's innovative structural tubes, while offering a cafe (opposite), a shop, and a bright red reception desk designed by Karim Rashid (right). An open square at the center of the floor can be enclosed for exhibitions or other events.





The audiovisual center on the seventh floor has furniture by Ross Lovegrove (left), while the library features clover-shaped seating on the second floor by Kazuyo Sejima (below). A stair climbs one of the building's 13 structural tubes (opposite).



articulate casual seating areas. By contrast, Karim Rashid's bright yellow seating for the art gallery and brilliant red reception desk on the first floor are whimsical sculptural pieces that guide visitors through the building rather than mark territory. And Ross Lovegrove's eye-popping, chartreuse chairs, tables, CD-listening stations, and screened video-viewing booths for the audiovisual center help identify certain functional areas while also creating circulation paths. Together with different materials and lighting on each floor, the furniture helps establish a unique identity for each level.

This stratification is projected onto the building skin as well. "We cut away a 118-foot-high cube from the space of the city and exposed the volume in cross-section," explains Ito. Indeed, the building's east and north elevations are composed of horizontal stripes of transparent and semitransparent glass and metal, exposing the diverse activities on each floor. But the south-facing facade has two layers of clear glass with a three-foot-wide air space that insulates the building's interior in winter and draws hot air up and out in summer. The west side, on the other hand, is completely obscured by a lightweight metal, louvered screen, which conceals egress stairs racing up the side of the building and a concrete wall behind. The roof, which is treated as the building's fifth facade, is bedecked with a louvered metal screen that hovers overhead as if to contain the tubes jutting out from below.

Even though construction is finished and the building opened in January, Mediatheque is still in design. But now the job is in the hands of local citizens, who must figure out how best to use their new $100 million facility. This marks a clean break with the set programs of many recent libraries, museums, community centers, and other public buildings commissioned by various Japanese government agencies over the past 10 years in an effort to jump-start the country's flailing, postbubble economy. While many of these buildings have been criticized for being poorly managed and underutilized after gala opening events, they laid the groundwork for this building by identifying potential pitfalls. It is hoped that, by endowing the public with the freedom to use and modulate the building as they see fit, Mediatheque will have a lasting impact on the next generation of Japan's public architecture. ■

Sources

Elevators: *Mitsubishi Electric Corporation*

Electrical installation: *Yurtec Co. Ltd., Taihei Denki Co. Ltd. and Tohzan Denki Co. Ltd. joint venture*

Electrical signal line: *Nippon Densetsu Kogyo Co. Ltd.*

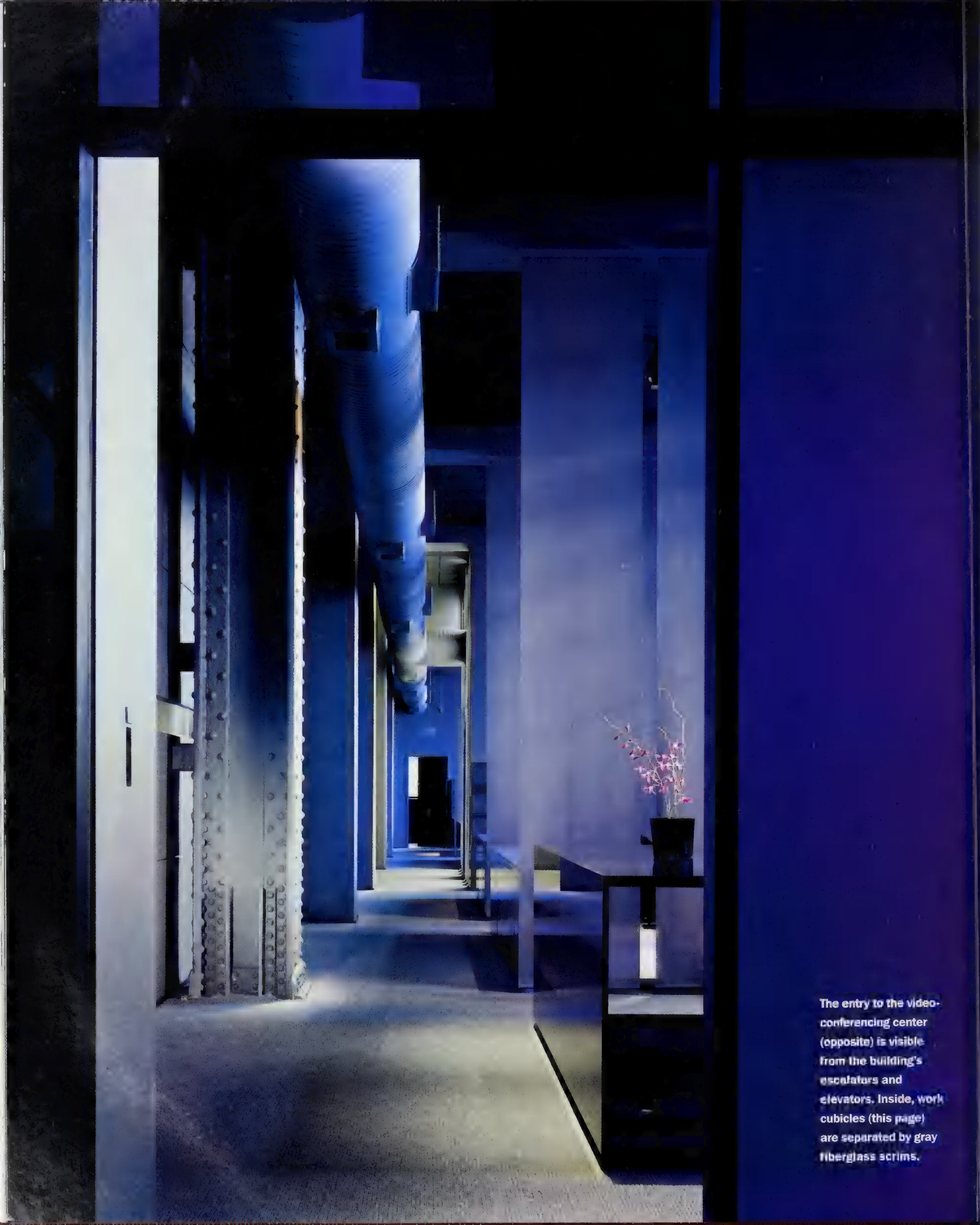
Lobby reception desk and furniture on fifth and sixth floors: *Karim Rashid*

Tables, wheeled chairs, and clover seating: *Kazuyo Sejima & Associates*

Wood-and-steel library benches: *K.T. Architecture*

CD-listening stations, tables, and chairs: *Ross Lovegrove*

WWW For more information on the people and products involved in this project, go to Projects at **www.architecturalrecord.com**



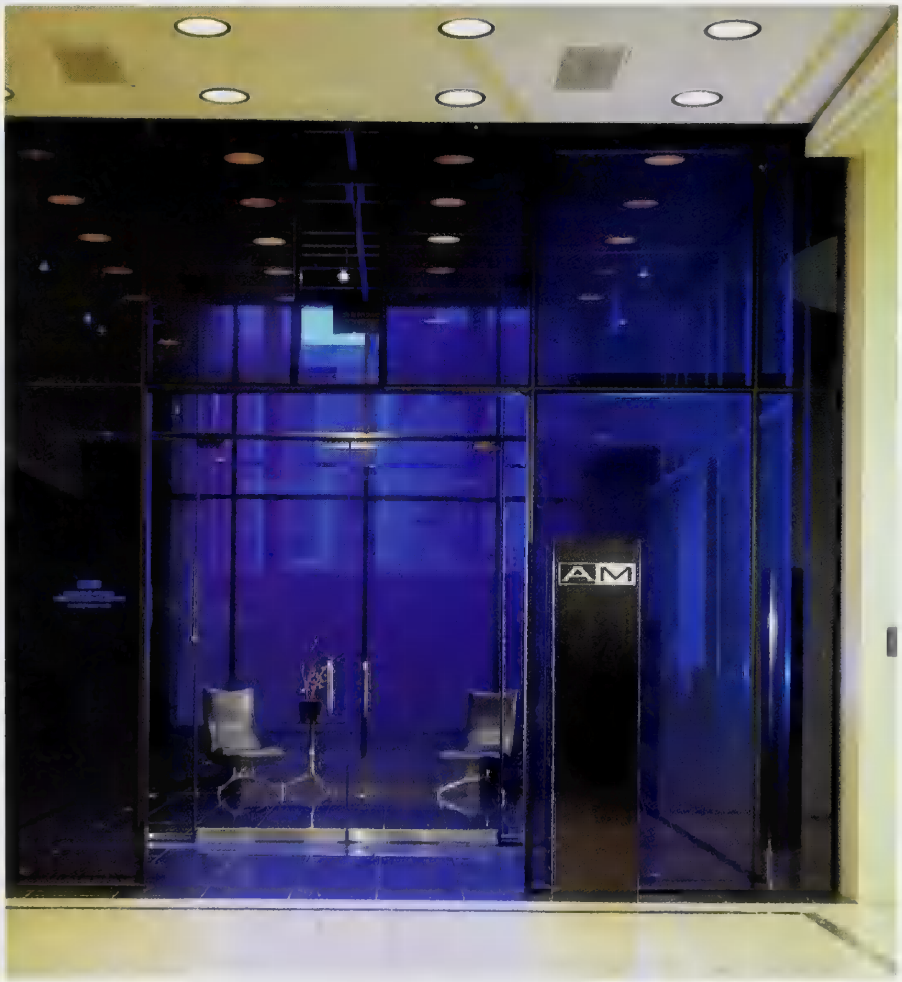
The entry to the video-conferencing center (opposite) is visible from the building's escalators and elevators. Inside, work cubicles (this page) are separated by gray fiberglass scrims.

Elliott+Associates creates a cyberage "blue box" for ACKERMAN MCQUEEN ADVERTISING that "broadcasts" the company's inner workings

By David Dillon

Light is both the medium and the message at Ackerman McQueen Advertising in Tulsa—natural light, artificial light, light as insight and idea. This is the ninth project that Elliott + Associates Architects has designed for the agency, and it is easily the most ambitious, combining sophisticated telecommunications technology with inventive and frequently playful details.

Ackerman McQueen occupies two floors of an ornate 1917 office tower in downtown Tulsa with 18-foot ceilings, massive concrete beams and braces, and dramatic skylights. In a 1992 renovation, Elliott + Associates turned the 12th floor—originally a drafting room for the Getty Oil Co.—into a laboratory for creative play. Visitors see the company logo projected on the beams and columns as they approach the front door. A path of carpet winds from the reception desk through the offices like an unfolding idea, with the adjacent walls serving as a gallery for the agency's work. And in the center of everything sits a large videoconference room where clients and ad directors turn raw concepts into polished marketing campaigns.



The 12th-floor spaces were attractive and serviceable but were invisible to the public and lacked the heightened visual punch that Angus McQueen wanted for his agency. "Our clients want theater," he told his architects, "so let's blow this [new] space out."

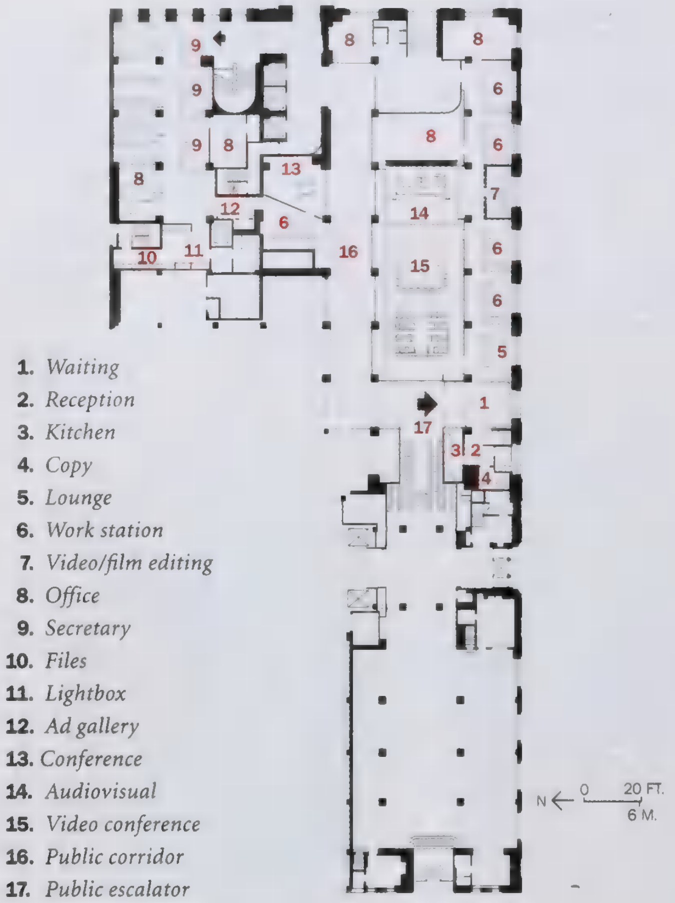
In 1999, Elliott + Associates translated the mandate into a transparent studio, stage, and videoconferencing center that resembles a large Minimalist TV set without dials or buttons. They located their "blue box" on the first floor, at the foot of the building's escalators and next to a wide public corridor that runs from the main lobby to the parking garage. Offices and small conference rooms line one side of the corridor, the blue box plus executive offices and a library line the other, with the curious public strolling in between.

Ackerman McQueen produces many television commercials (Leap Frog toys and Six Flags amusement parks are among its accounts) so they were comfortable with the concept of a gigantic TV set. It also satisfied the desire for theater by blurring the line between inside and out, observer and participant. Every day, the corridor audience peers through blue glass walls—created by sandwiching a blue gel between clear glass layers—at clients, ad directors, and others playing out a high-tech drama in front of a 10-screen video wall that throbs with images and information. The result is a surreal blend of video game and *The Today Show*. The video wall is backed with enough electronic gadgetry for a moon shot, including a cyclorama for projecting real scenes behind talking heads. Blackout shades are available for privacy, but they are rarely used.

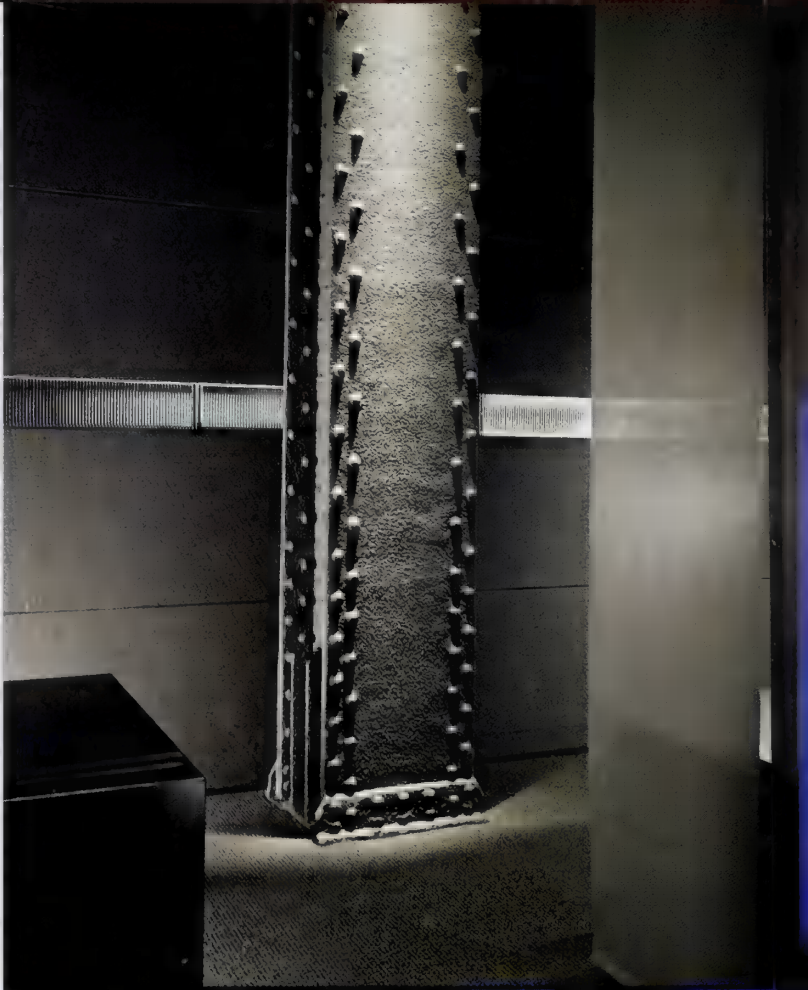
"Ackerman McQueen is in the idea business," explains Rand Elliott, "and this space is designed to communicate the power of ideas. It demonstrates how they can surprise, soothe, or move you to action. It shows the inside of an idea."

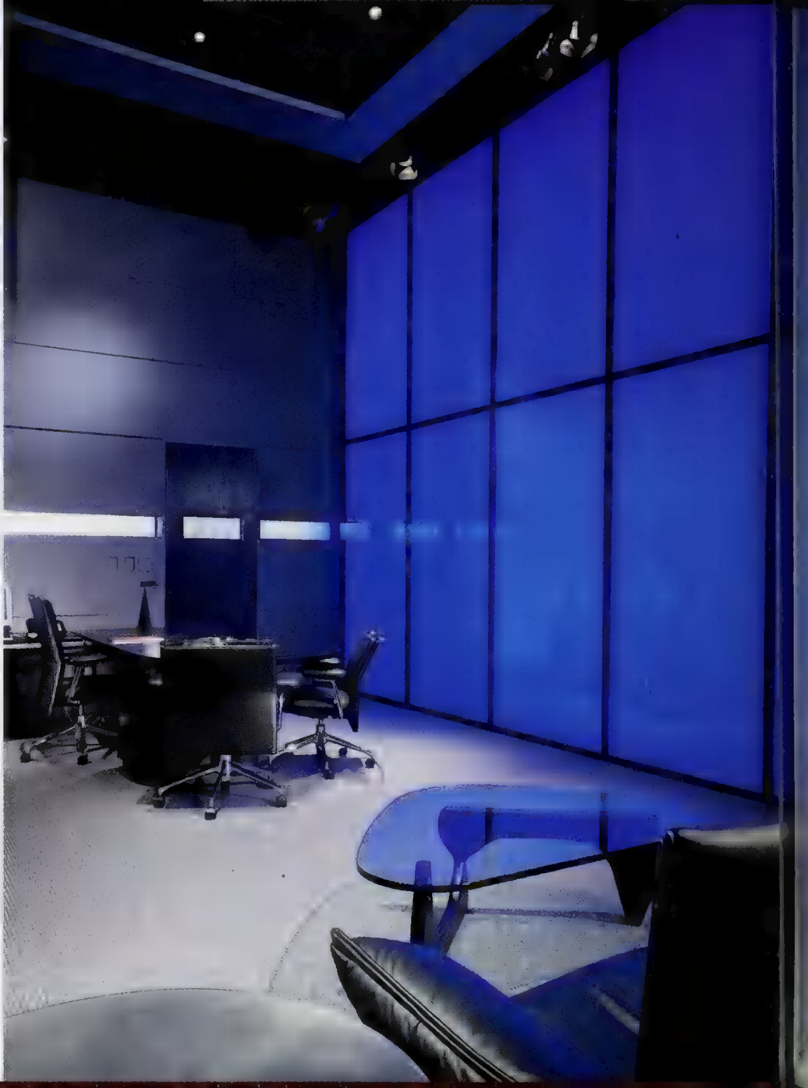
But getting inside an idea is only part of the story at Ackerman McQueen. Through clever lighting and creative use of materials, Elliott +

Project: *Ackerman McQueen Advertising executive offices and videoconferencing center, Tulsa*
Architect: *Elliott + Associates Architects—Rand Elliott, FAIA, principal*
Associate architect: *Bill Yen, AIA*
Engineers: *Flynt & Kallenberger (mechanical and electrical); Eudaley Engineering (structural)*
General contractor: *Lassiter Richey Co.*



1. *Waiting*
2. *Reception*
3. *Kitchen*
4. *Copy*
5. *Lounge*
6. *Work station*
7. *Video/film editing*
8. *Office*
9. *Secretary*
10. *Files*
11. *Lightbox*
12. *Ad gallery*
13. *Conference*
14. *Audiovisual*
15. *Video conference*
16. *Public corridor*
17. *Public escalator*





Associates turned the entire space into an ad. Flanking the blue box is a row of small offices, separated from one another by gray fiberglass scrims that provide a soothing counterpoint to the fireworks on the video wall. An exposed-steel column and a recycled revolving door serve as reminders that these cyberage quarters have been carved out of a historic building. The bathroom, a slick gray-on-gray affair, contains a stainless-steel prison toilet; printed backwards on a facing wall and reflected in its mirrors are aphorisms from chairman McQueen, such as "the most expensive advertising is advertising that doesn't work." Such wry details undercut the pretensions implicit in the phrase "corporate communications," suggesting that a successful company is one that doesn't take itself too seriously.

But it's the big "blue box" that makes the design. The combination of light, color, movement, and reflection creates a memorable kinetic portrait of an ad agency promoting the next new thing. ■

In the blue panels (this page and opposite, top), a colored gel was laminated between sheets of glass. The office area is gray-on-gray (opposite, bottom left) with riveted steel columns (above, right) original to the 1917 structure. The video wall (opposite, top) is the videoconferencing centerpiece with a control area (opposite, bottom right) tucked behind it.

Sources
Curtain wall: *Kawneer*
Glazing: *Bendheim, Glass Pro, Saflex*
Windows: *Vimco*
Glass doors: *Alpha Glass*
Hardware: *Corbin, Hager*
Paints and stains: *Sherwin*
Lighting: *ELP, Halo, Lumiere, Lithonia, Artimede, Concealite, Tubelighting, Supervision, Con-Tech, Norbert Belfer*

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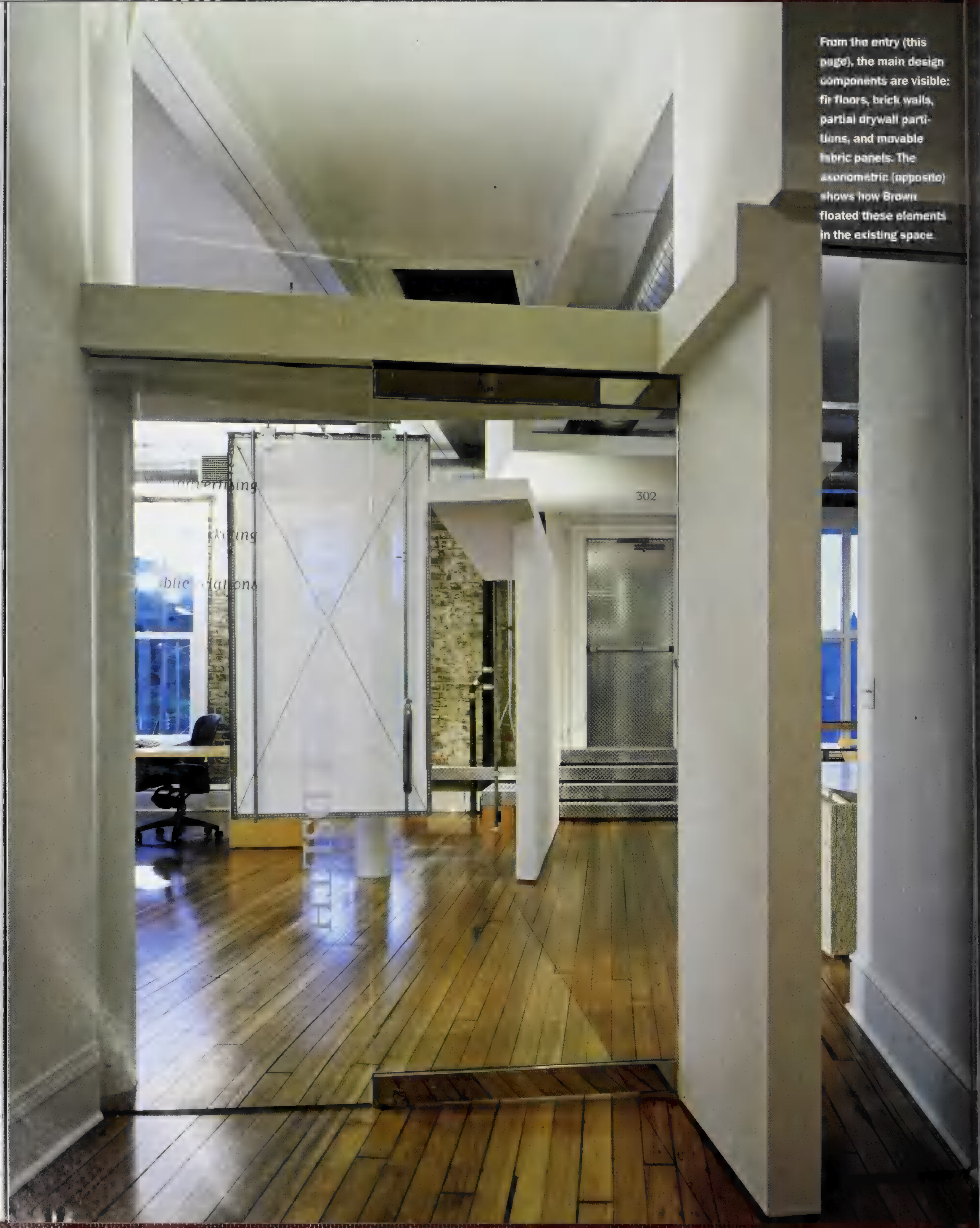


From the entry (this page), the main design components are visible: fir floors, brick walls, partial drywall partitions, and movable fabric panels. The axonometric (opposite) shows how Brown floated these elements in the existing space.

Randy **Brown** exposes 19th-century brick walls and inserts a collage of inventive elements at the **POULSON/KJELDSETH AD AGENCY**

The offices of two advertising agencies—Poulson/Kjeldseth in Sioux City, Iowa, and Ackerman McQueen in Tulsa, Okla. [page 210]—provide a striking study in contrasts. Each of the two spaces, by Randy Brown Architect and Elliott + Associates, respectively, was inserted into a late-19th- or early-20th-century office building, but they differ dramatically in architectural language.

By David Dillon

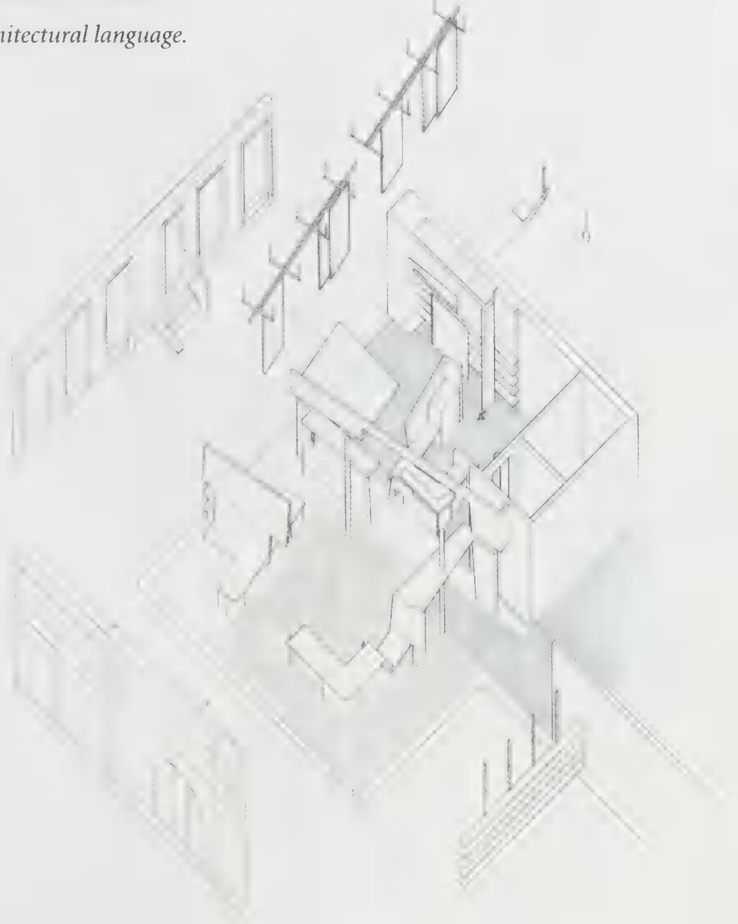
I'm in a hurry and don't have a dime. What can you do for me?" Architects hear this bleat from clients all the time and either throw up their hands or rise to the challenge of making something out of nothing.

Omaha architect Randy Brown got such a call from Poulson/Kjeldseth, a small advertising and public relations firm in Sioux City, Iowa, looking to convert a downtown corner loft into new offices. The space in a 19th-century building measured barely 1,500 square feet, and had passed previous lives as a warehouse, brothel, and communal wastebasket. By the time these new owners got hold of it, its historic character had nearly vanished behind decades of dirt and makeshift partitions. The renovation budget was a miserly $75,000.

Brown's solution was obvious but sensible given the constraints: Peel the existing space back to the studs and float a collage of contemporary elements within it to create a dialogue between old and new, whole and part, order and apparent disorder. He exposed the brick walls and wood flooring, replastered the ceiling, and rebuilt the tall, double-hung windows that had once flooded the interior with light. An original, flared steel column now marks the entrance; panel joints and screw-head patterns serve as spare decoration.

Within the third-floor shell, Brown created four zones—studio, office, conference room, and reception—separated by half-walls and thin fabric panels that travel in shallow tracks suspended from the ceiling. With canted partitions and strategically placed slots and cutouts, providing views across the room and out to the city, space flows continuously from one zone to another. The interplay of many different materials, textures, and geometries creates privacy without isolation and a general sense of improvisational energy.

"People tell me they expect to see spaces like this in New York but not in Sioux City," says Kevin Kjeldseth. "They assume it must have been very expensive. I reveal nothing." (Until now, that is.)



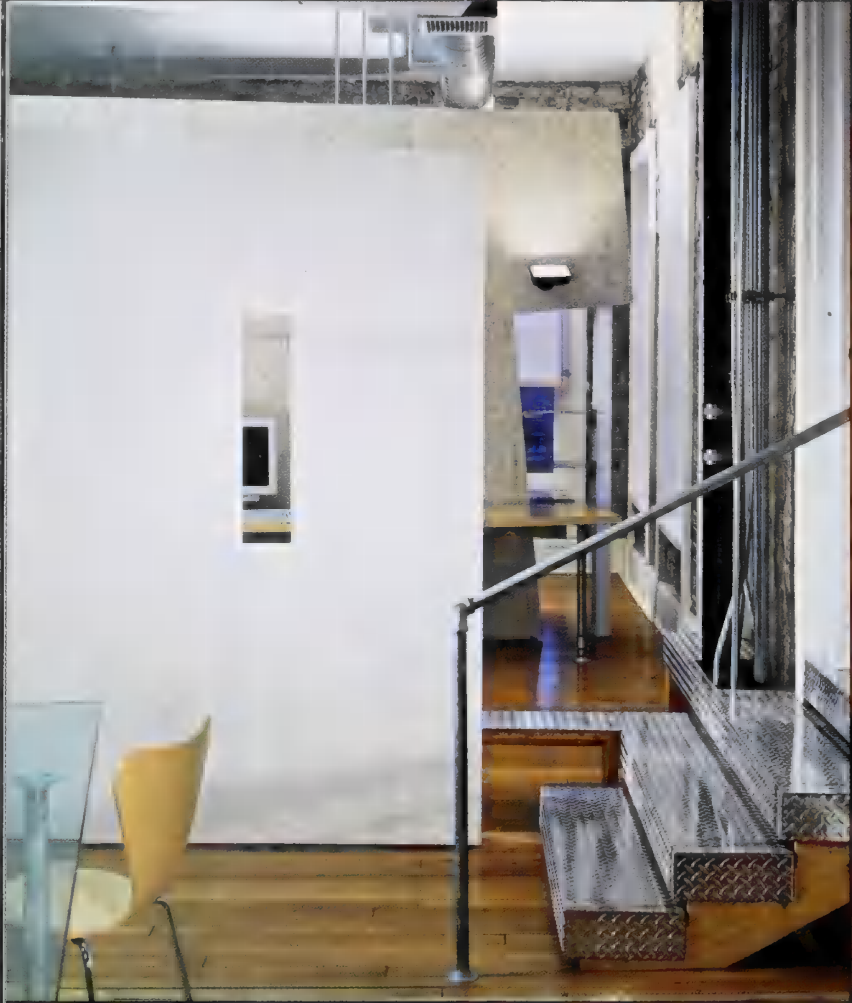
Sioux City is hardly a center of fashion. It is corn-and-cattle country, where people pore over seed catalogs. But much of the freshness of the Poulson/Kjeldseth offices resides in simple custom details that owe more to Agway than to trendy design magazines. Brown's design celebrates manual labor and making do the way Elliott + Associates' Ackerman McQueen agency in Tulsa [page 210] celebrates high technology.

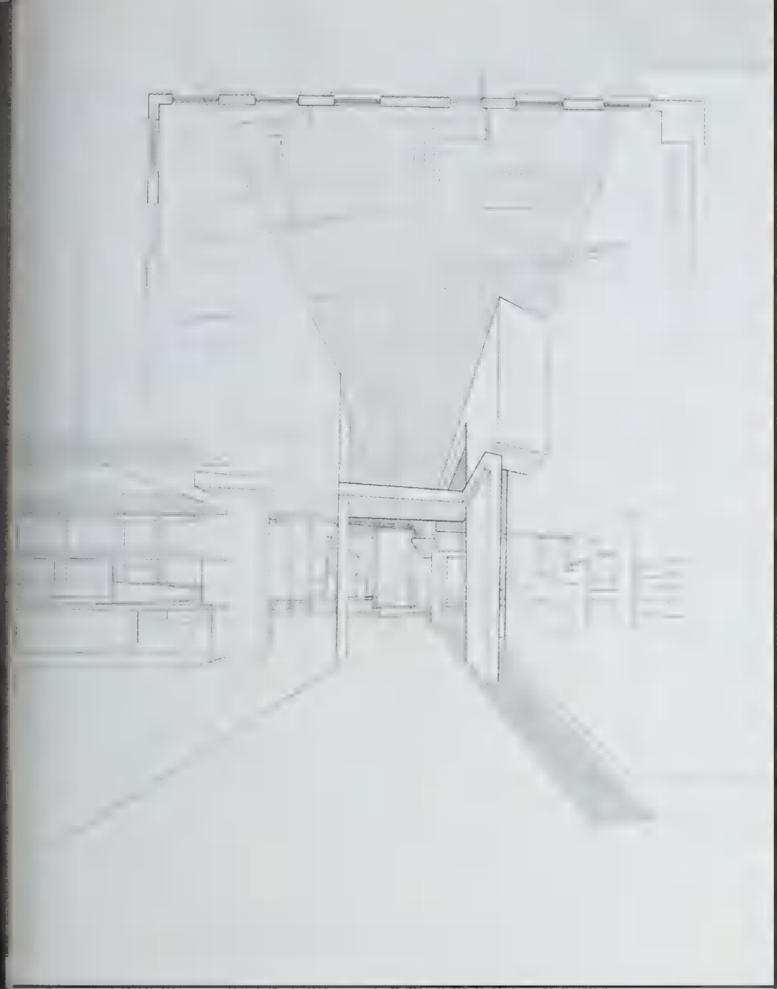
"Every chance we got to create a new detail, we took," says Brown. "It was a way to explore and enrich the design, but without spending a lot of money. Here, we were able to continue the design process through construction. You don't get to do that when you're working only on paper."

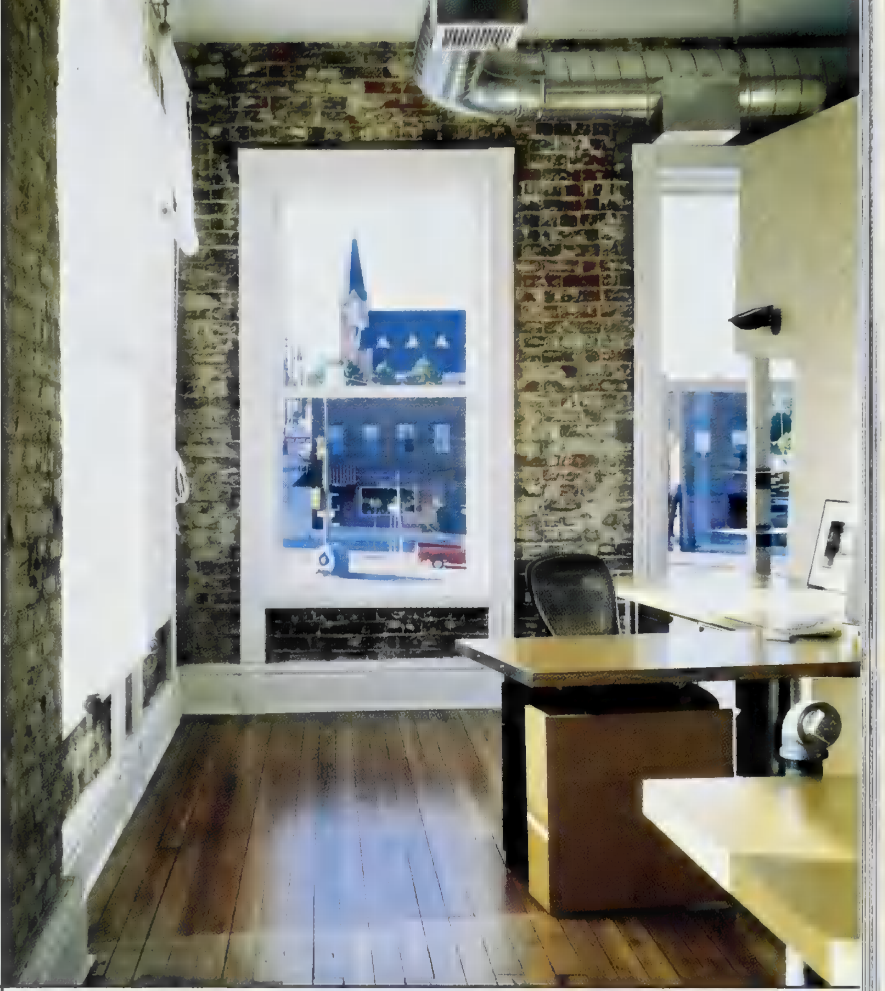
To control costs further, Brown fabricated most of the furniture, cabinetry, and hardware in his Omaha studio and trucked it to Sioux City,

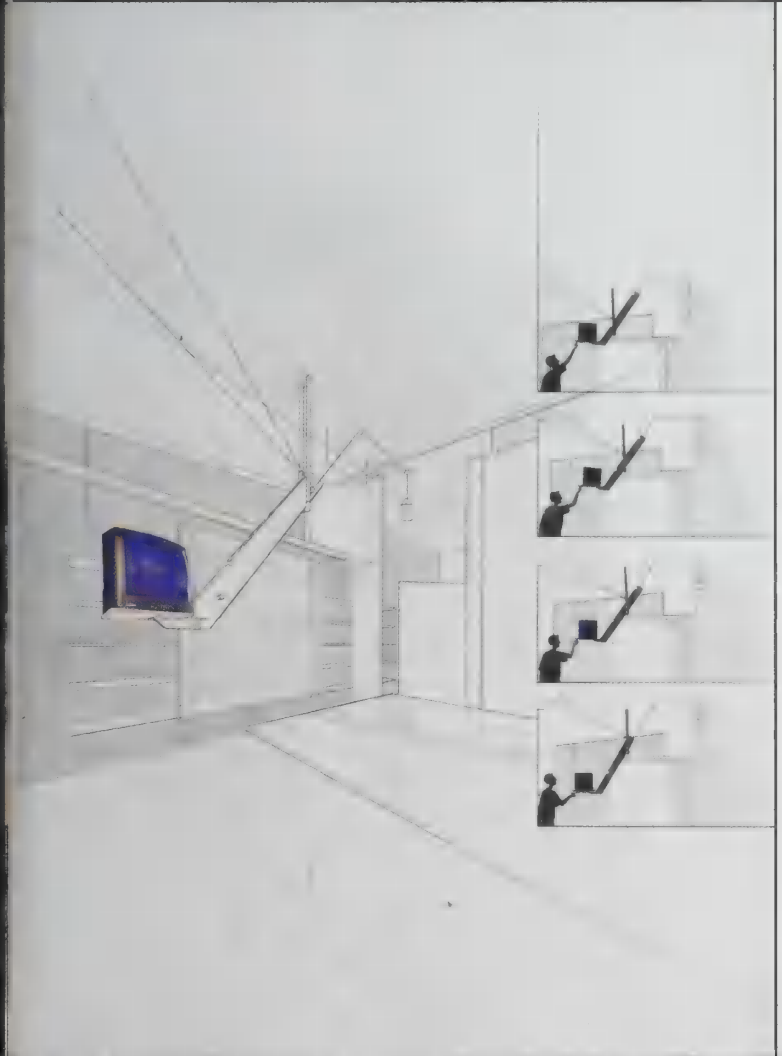
David Dillon is the architecture critic of the Dallas Morning News *and a contributing editor of* ARCHITECTURAL RECORD.

Project: *Poulson/Kjeldseth Ad Agency + Graphic Design, Sioux City, Iowa*
Architect: *Randy Brown Architect—Randy Brown, AIA, principal-in-charge; Matthew Kruntorad, Geoff DeOld, Cory Hoelker, project team*
Client: *Jan Poulson, Kevin Kjeldseth, Terri Kjeldseth*
General contractor: *WA Klinger, Inc., John Gleeson*









where he and the owners and their families installed it over three weekends. Wood doors were edged in steel and turned into desks and tables; plumbing pipe was used to support tables, bookshelves, and light fixtures. The window shades were constructed from burlap, steel rods, pulleys, and other hardware-store items. And in a witty, low-tech turn, the television monitor in the conference room sits at the end of a simple steel-and-wood arm counterbalanced by a weighted galvanized bucket. Like the window shades and fabric partitions, the arm must be raised and lowered by hand instead of by switch.

"We all enjoyed blending old-fashioned technology with new," Brown explains. "It maintains a sense of continuity." And it also confirms the role of limits in good architecture. Poulson/Kjeldseth is a small project with a miniscule budget in an old building in the middle of the prairie. Within these unlikely circumstances, the architects created a space that serves the client, enhances the building, and in small but significant ways expresses the pragmatic spirit of the place. ■

Wood doors with plumbing-pipe legs became desks (opposite, top and bottom right). A simple contraption, counterbalanced by a weighted bucket (left and opposite, left), adjusts the TV height.

Sources

Doors: *Brite Vue (frameless glass)*
Hardware: *Blum (cabinet hinges and door slides); Johnson Hardware (sliding-door track)*
Paint: *Diamond Vogel*
Stain: *Clear polyurethane*
Seating: *Cassina, Herman Miller*
Lighting: *Metalux*
Drywall: *Tecktum*

WWW For more information on the people and products involved in this project, go to Projects at ***www.architecturalrecord.com***

Views from inside the parking garage toward the stair tower (this page) are veiled by layered mesh and grate. Shadows within the sheathing create a moiré effect (opposite).

TEN Arquitectos visually transforms the PRINCETON PARKING GARAGE by wrapping it in a veil of stainless steel

By Sarah Amelar

Like great venetian blinds, hanging scrims of sheer stainless-steel fabric sheathe Princeton University's newest parking garage. Though rather simple, the wrapper changes character with weather, light, and season—rippling in the breeze, appearing opaque and glowingly metallic when struck by intense rays of sun, glinting through icicles in winter, and becoming veil-like when backlit at night. While the underlying structure is straightforward, the skin transforms it.

But before the outer membrane was even considered, the university set out to create 740 parking spaces efficiently and economically. Accordingly, it hired Walker Parking Consultants, rather than world-famous architects. Some 10 years earlier, Princeton had engaged architects Machado & Silvetti for all phases of a parking structure, but that project had to stand amid historic campus buildings—and ultimately carried a sizable price tag.

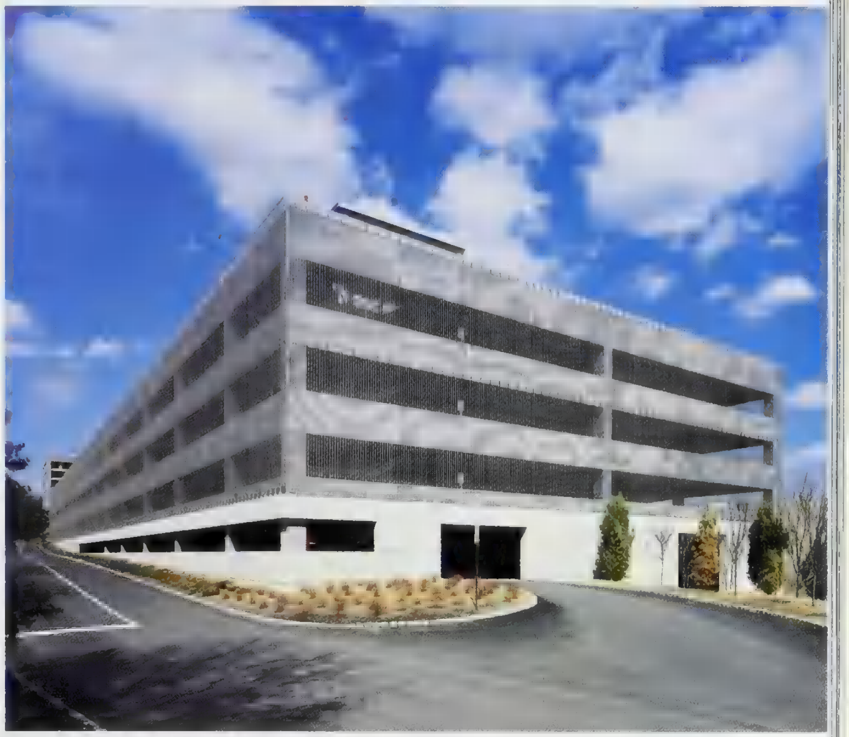
This new site, by contrast, borders railroad tracks, with an indoor hockey rink, physical plant, and office structure nearby. At Princeton, however, even the railway station is picturesque—and while the property was unencumbered by the architecturally sensitive issues facing the earlier garage, Walker's structure would have high visibility from the quaint one-car train that brings passengers here. When the university's trustees and members of the Grounds and Buildings Committee caught sight of the consultant's scheme for an ordinary-looking precast-concrete garage with 53,000-square-foot floor plates, they balked.

And so, enter stage left: architect Enrique Norten, Hon. FAIA, of Mexico City's TEN Arquitectos. Norten was already well known at Princeton School of Architecture, not only for his designs, but also as a guest lecturer. He soon accepted the commission to wrap a skin around the building and stair tower.

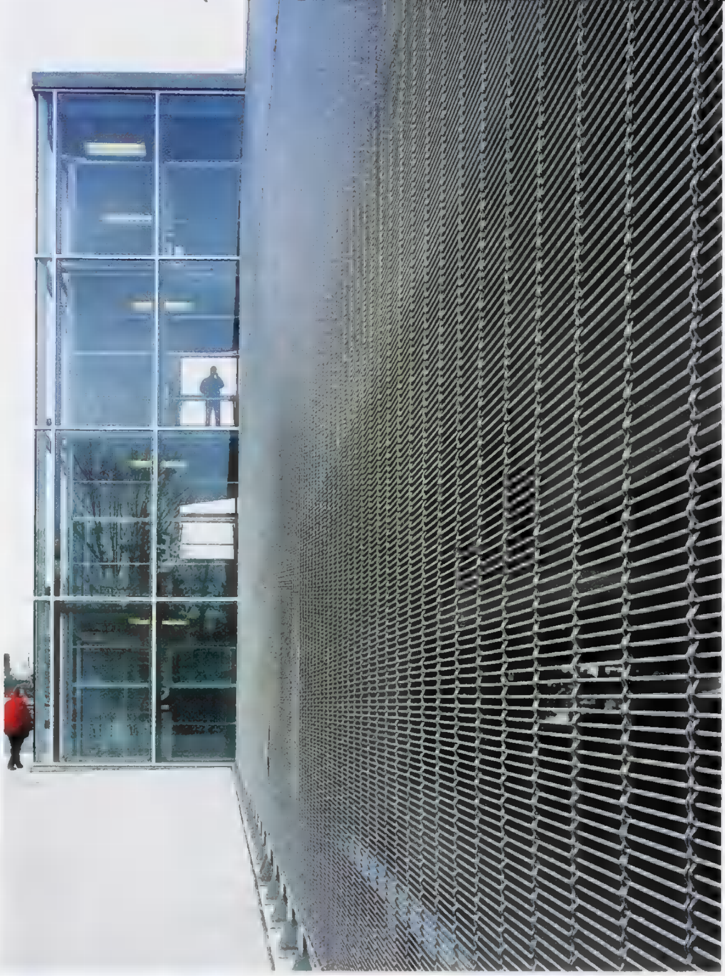
The architect also had ideas about siting. Rather than place the garage beside the hockey rink, Norten convinced his client to shape a future green space (an area currently used for outdoor parking) with a building—the hockey rink, office building, or garage—on each of its three sides.

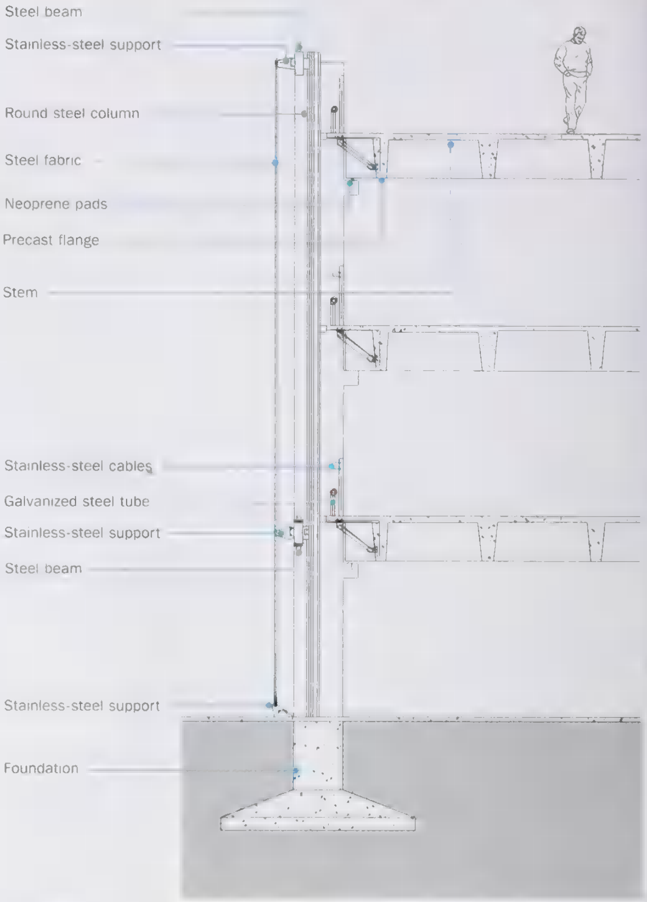
But sheathing clearly offered the greatest opportunity for invention. TEN Arquitectos had long experimented with visually light building skins, including the glass envelope of Hotel Habita in Mexico City [MARCH 2001, page 106]. For this garage, the firm initially considered a range of materials, including perforated metal and stone, and various meshes. A code issue influenced their choices: To meet the requirements for an open parking structure (one without, for example, sprinklers), the outer shell would need open areas on at least 20 percent of its overall surface, and the total length of those openings could measure no less that 40 percent of the building's perimeter. "We knew we didn't want punched openings," recalls Norten, "and so, we decided to look for a material that would comply with this formula at every square inch." Thus, they found a microsolution that simultaneously resolves the macrocondition.

The durable material TEN selected is a German-made stainless-steel fabric that hangs from steel "curtain rods," attached to precast-concrete spandrel panels at the top. Embedded steel brackets prevent the curtains

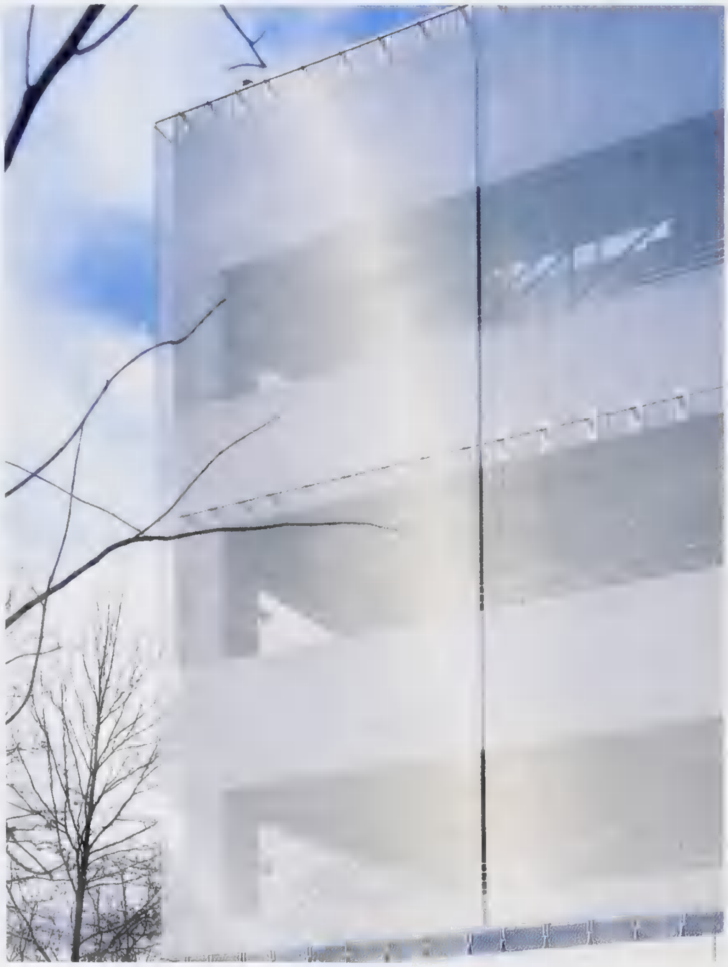


Project: *Princeton Parking Garage*
Architect: *TEN Arquitectos—Enrique Norten, Hon. FAIA, Bernardo Gómez-Pimienta, principals; Julio Amezcua, Francisco Pardo, Rubén Garnica, Martine Paquin, Miguel Ríos, project team*
Architect of record: *Walker Parking Consultants*
Client: *Princeton University*
Engineer: *Walker Parking Consultants*





WALL SECTION



The stainless-steel skin changes with the quality of light, appearing more opaque and glowingly metallic as the illumination intensifies (left). Spring connections fasten it at the bottom (opposite).

from billowing out fully. Elegantly simple spring connections at the bottom hold the fabric fairly taut while allowing it to ripple. As the material moves, it casts shadows, creating a gauzy moiré effect.

To keep the prefab structure as transparent and airy as possible, the size of exterior openings was maximized. The architects also tinted the concrete black, allowing the precast members to recede optically behind the steel veil.

Norten wanted to place the stair within the garage's main volume, but for security reasons, his client asked him instead to finesse the details of a prefabricated, separately articulated stair tower. "The stair, like much of the building," he says, "came right off the shelf." The architects enveloped the tower in clear glass, layered with steel grate. An adjacent bus shelter, also by TEN, will have an orange glass canopy.

TEN's original design called for wrapping the building's four faces in steel fabric, but Princeton ultimately economized and left one side uncovered—a place where, Norten hopes, a screen of ivy will eventually grow. The uncovered face now offers a compelling contrast between the bare structure and the sheathed elevations, which manage—by remarkably simple means—to take on visually greater lightness.

"We found it amusing that such a big building could be, more or less, unloaded from a truck," says Norten. "In the end, we were pleased to give it such a metamorphic skin." ■

Sources

Structural system: *Precast-concrete beams and columns*

Cladding: *GKD (stainless-steel mesh)*

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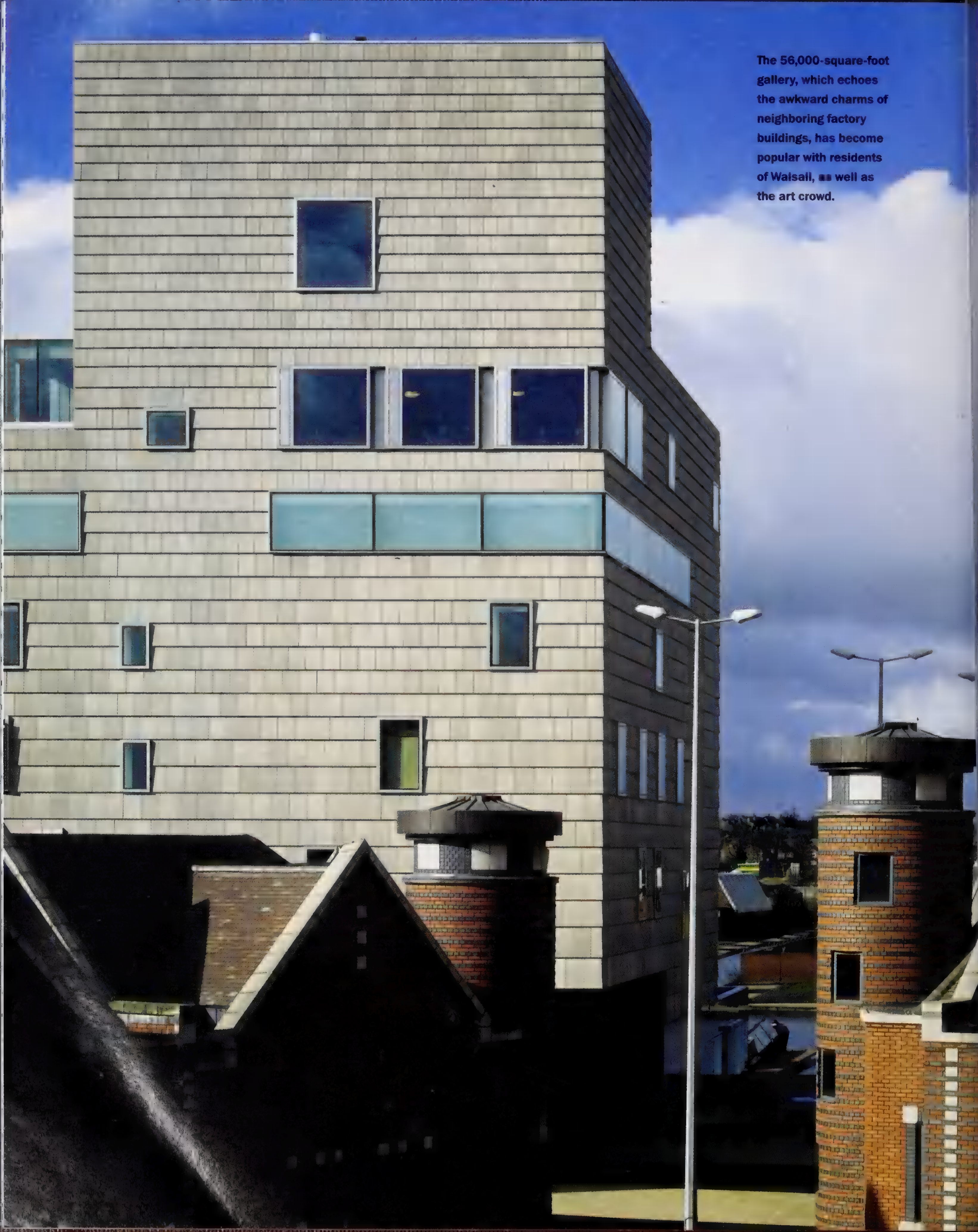


The 56,000-square-foot gallery, which echoes the awkward charms of neighboring factory buildings, has become popular with residents of Walsall, as well as the art crowd.

Rising from its industrial setting, Caruso St John's WALSALL GALLERY is taking Cool Britannia to the country's unglamorous Midlands

By Penny McGuire

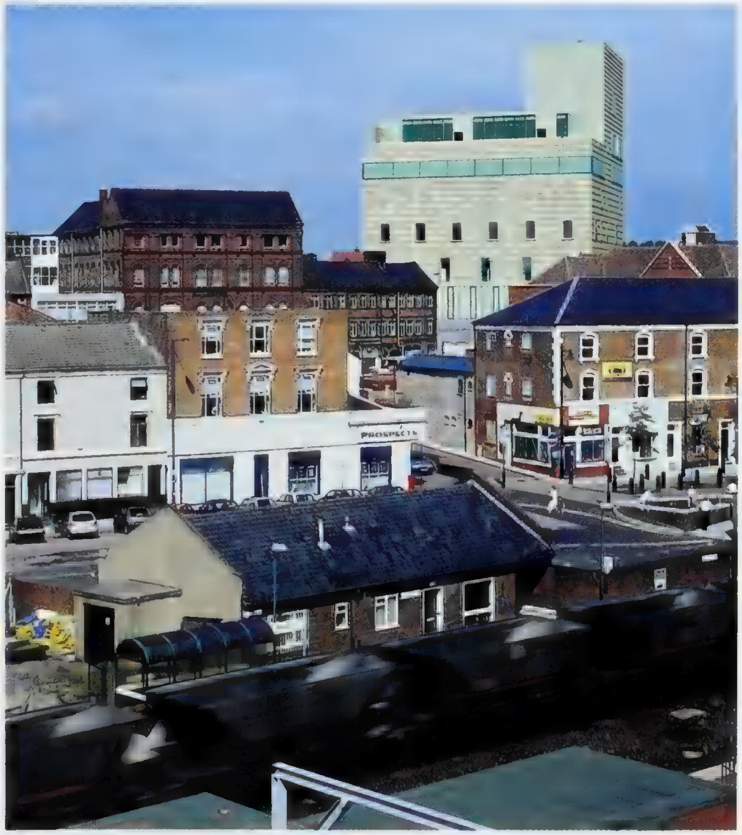
The town of Walsall lies a half hour's train journey north of the unlovely but prosperous city of Birmingham (cars, trade fairs, Bourneville chocolates), in Britain's Midlands. It is probably safe to say that most people in Britain have not visited Walsall and, until the advent of Caruso St John's New Art Gallery, had no intention of doing so.

In the 19th century, the town was a leather-working center with factories linked to a great network of canals that still threads the country. These days, long after the decline of manufacturing, the town of 263,000 suffers from a host of economic and social ills, including the highest mortality rate in the country and a shortage of doctors. Although most of Walsall's factories stand idle, a few still operate, including the gallery's neighbor—a massive, redbrick building with the characteristic big windows and shallow rooms needed to bring daylight to 19th-century workers.

"We're interested in the direct and awkward character of industrial buildings, the very abrupt volumes," says Peter St John. "They're purely functional but also adjusted over time so that you get rich volumes and compositions." St John and his partner, Adam Caruso, an American, are based in London and won the Walsall commission in a design competition in 1995. The format for the competition (which called for only two sheets of text and four drawings) discouraged large firms from entering and allowed the talents of a youthful practice, hitherto unknown, to rise to the top.

Arriving by train, visitors can see the gallery's broken profile as they pull into Walsall. With its five-story tower rising from a main block, the gallery emerges from the town's untidy streetscape. Above a stainless-steel-clad base, the building is uniformly covered in overlapping terra-cotta tiles and perforated by a random arrangement of glazed openings. At first glance, the gallery resembles the stacked volumes scattered around the Midlands, so that for a second you are in familiar territory.

The entrance to the gallery, which stands on axis with Walsall's Victorian canal, is at the west end of town, off a new square (whose paving is painted in broad, flat stripes by artist Richard Wentworth). Along its north and east sides, the square is flanked by prosaic buildings for Woolworths and British Homes Stores. Visible from afar, the gallery

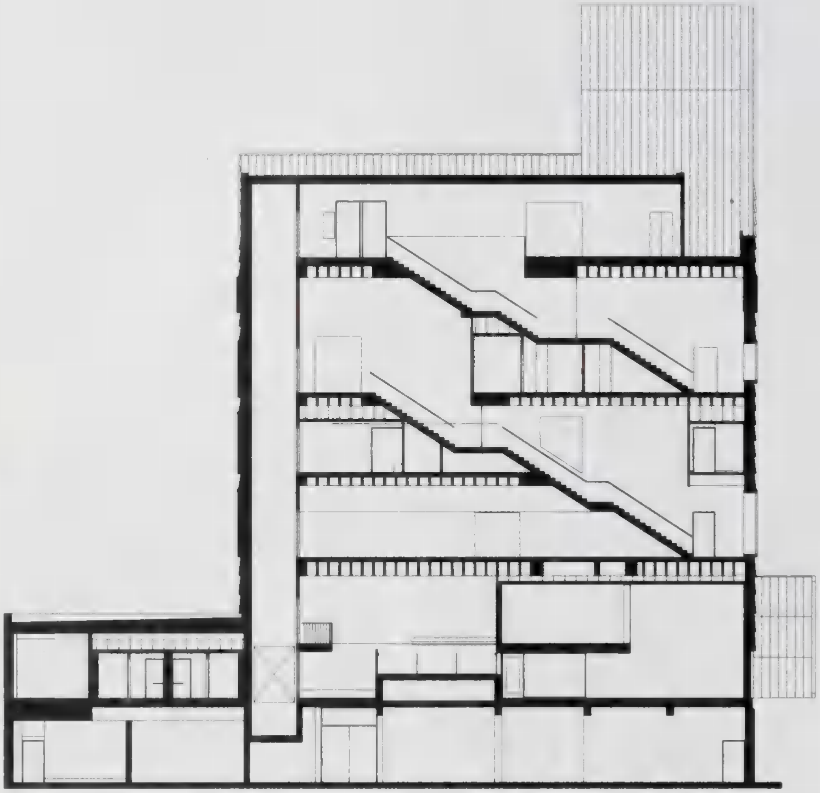


anchors the top of the high street and corresponds with the town's other landmark, the parish church of St. Matthew.

On the town side, the gallery's facade is formally strong, "like a sphinx," says St John, so it stands up as a focal point for the disparate collection of buildings around it. In spite of its distant monumentality, at close range the exterior has a textural, at times even a chameleon, quality. The silvery gray tiles are composed of different mixes of clay, so their color varies subtly, and the building's skin, sensitive to changing temper-

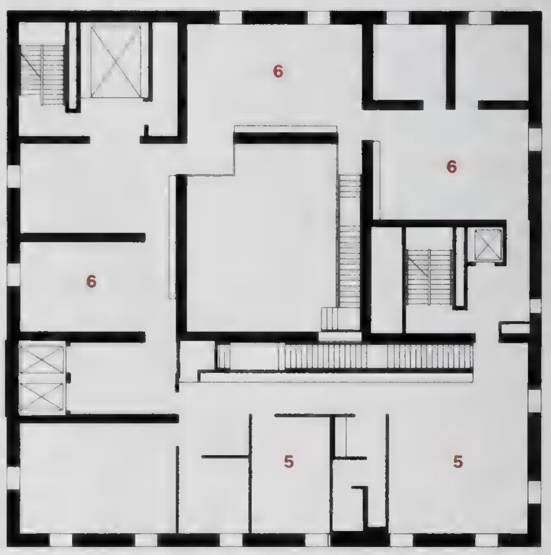
Penny McGuire is senior editor of Architectural Review *in London and has written for architecture and design publications such as* Domus *and* Abitare *in Italy and* Belle *in Australia.*

Project: *New Art Gallery, Walsall, England*
Architect: *Caruso St John Architects—Adam Caruso, Peter St John, Laurie Hallows, Alun Jones, Martin Bradley, Andres Martinez, Silvia Ullmayer*
Engineers: *Arup (structural, services, facade, acoustic)*
Consultants: *David Bonnett Architects (access); Bruce McAllister (art handling); Michael Nash and Jane Chipchase (graphics); Lynn Kinnear (landscape); Andy Baskeyfield, David Young (security)*
Project manager: *Citex—Simon Whelan*
Contractor: *Sir Robert McAlpine Ltd.*

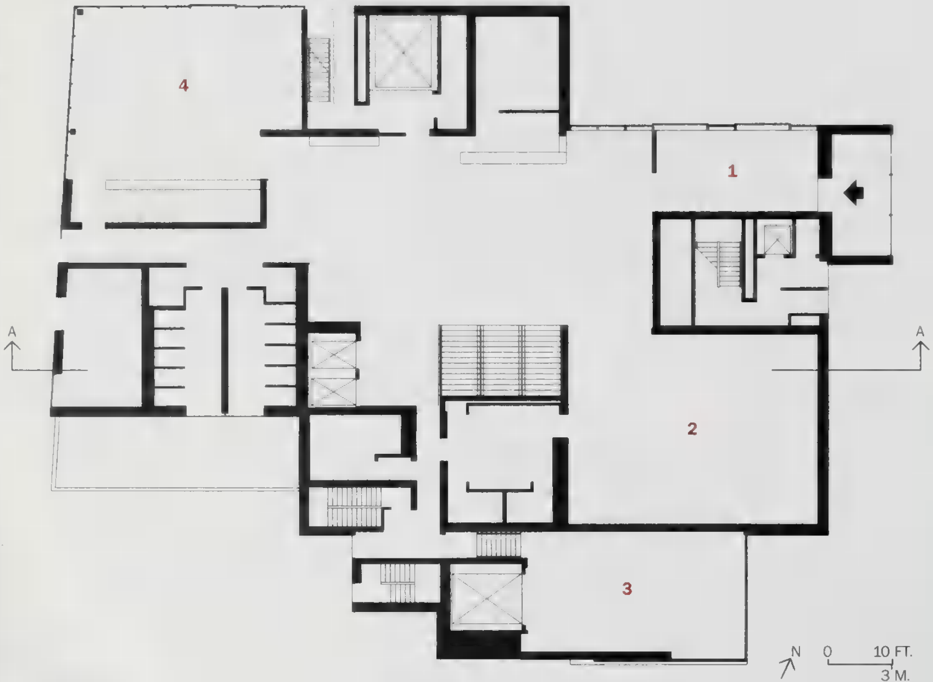


SECTION A-A

1. *Entry lobby*
2. *Children's gallery*
3. *Loading dock*
4. *Bookshop/cafe*
5. *Staff offices*
6. *Garman Ryan Collection*

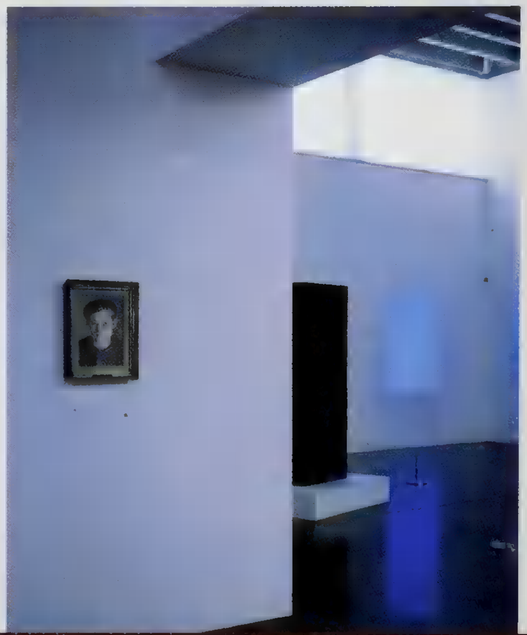


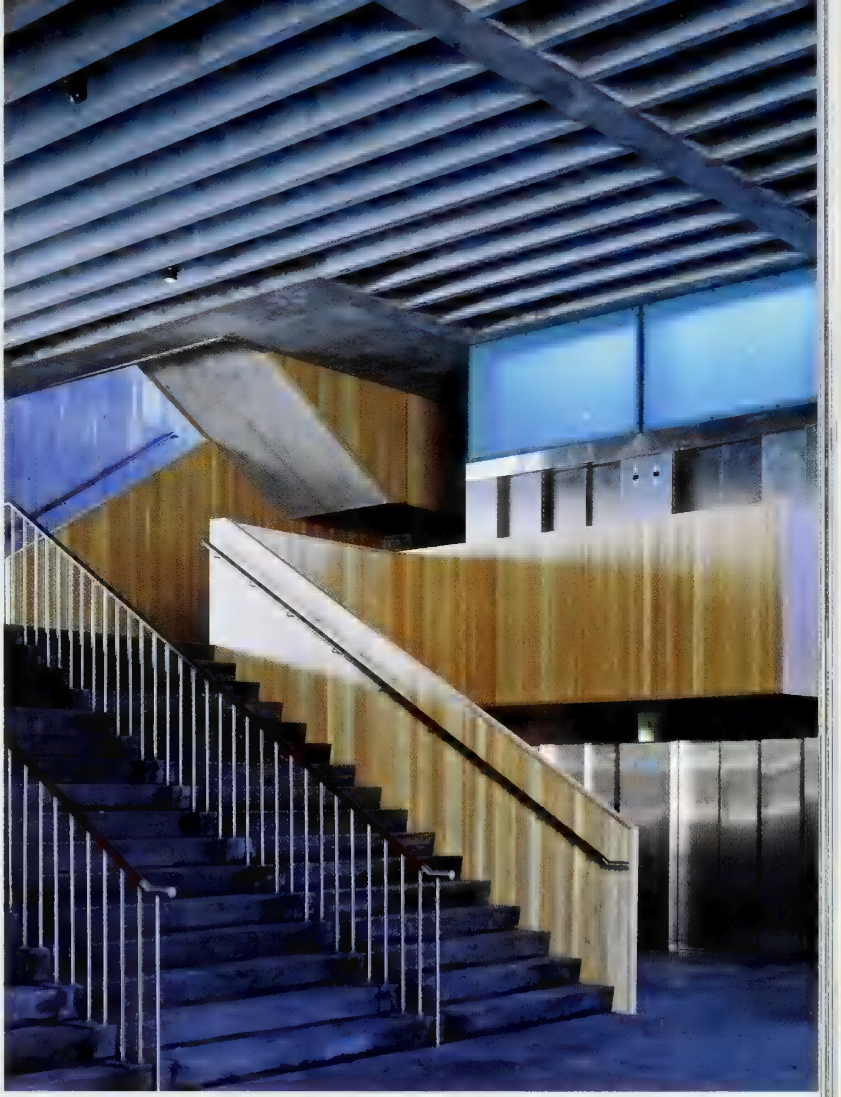
THIRD FLOOR



GROUND FLOOR

An all-concrete structure, the building combines poured-in-place and precast members. Timber cladding picks up the board markings of poured-concrete walls (opposite left). Wood adds warmth to large spaces, such as the grand stairway (opposite right). Daylight is brought in from clerestory windows in many galleries (below).





ature and light, turns black and cold on a dark day, almost red in the evening. As the tiles diminish in size toward the top, they create a modest optical illusion: walls seem to depart from the vertical, their outlines blurred by the jagged silhouette of overlapping scales.

"We chose a material that had some connection with the tradition of clay-brick buildings in the Midlands, that would not make everything else feel dowdy," says St John. "For the same reason, we wanted the building to be ambivalent, almost familiar, and didn't want it to be immediately legible. We're not interested in architecture in which functions have diagrammatic clarity. We tried to create a building that was like an awkward friend, somebody who's not easy to get on with, but who, once you know him, is a friend for life."

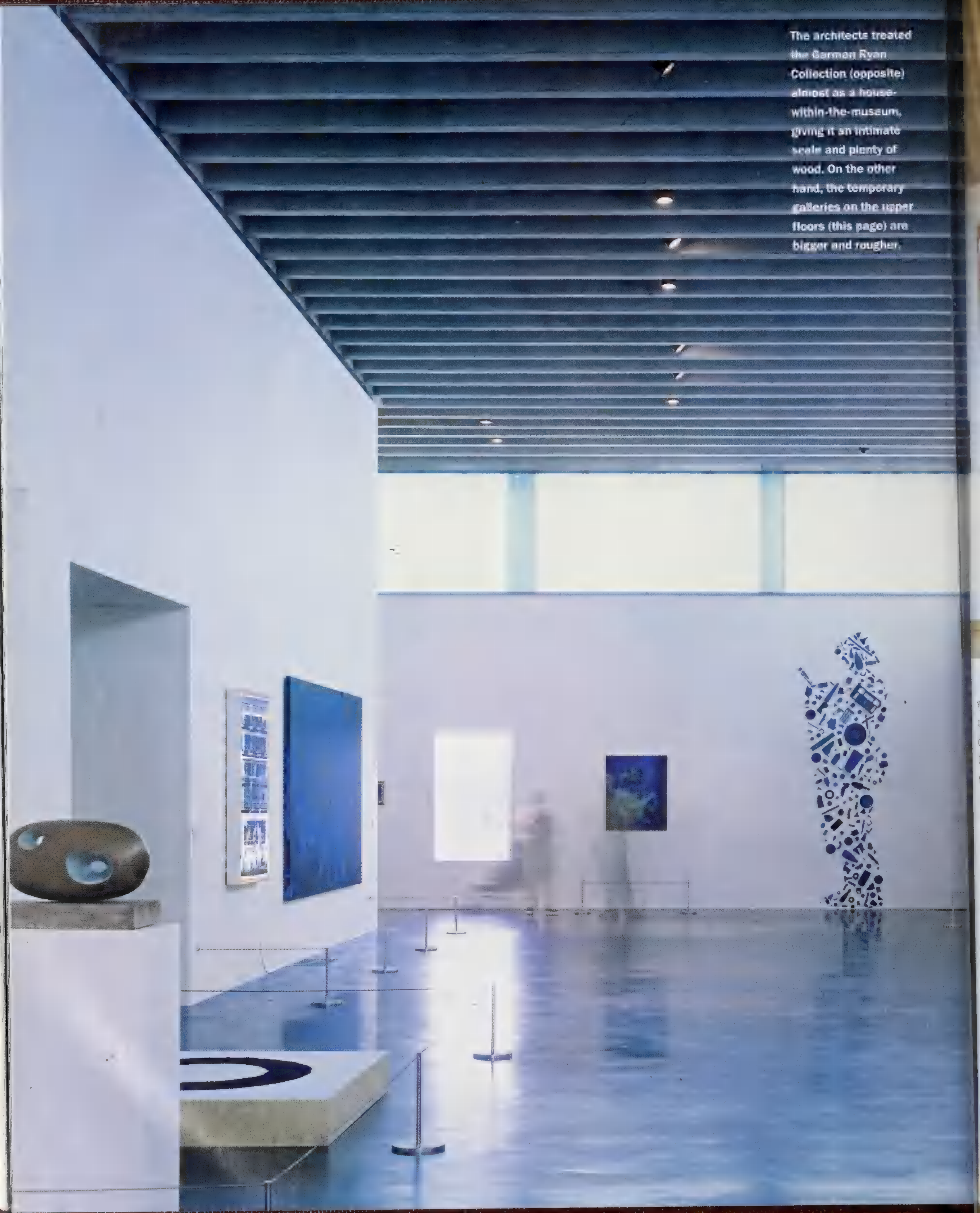
A showcase for two women's passion for art

The gallery has generated a great deal of public excitement—a response, in part, to the client's intention to create a contemporary civic building in 19th-century tradition, constructed for the benefit of local people to celebrate a local bequest. Commissioned by the town's Metropolitan Borough Council, funded by the national arts lottery and European Regional Development Fund, and run by an inspired young director, Peter Jenkinson, the gallery houses the Garman Ryan Collection. The artwork was left to the town in 1973 by Kathleen Garman, a local resident and wife of the sculptor Jacob Epstein. Garman had assembled the collection over a period of 14 years with her friend, the artist Sally Ryan. There are no grand works, but the collection is a beguiling testament to personal passion. Along with Epstein's sculptures and works by friends and relations such as Augustus John and Lucian Freud, there are also intimate studies and drawings by Rembrandt, Monet, Degas, Constable, Modigliani, Van Gogh, Durer, and others.

The history and personal nature of the collection, as well as the small size of many of the works, encouraged the architects to look to the English country house for inspiration—in particular, Hardwick Hall, a late-16th-century mansion in Derbyshire, by Robert Smythson. "It's one of my favorite buildings," St John explains. "At the time, it was technically very innovative. It had more glass than any other house in Britain, tall windows onto the landscape, and a fantastic roof and profile. We felt that the image of [this] house was something people could relate to."

The building is replete with diverse references, some more obscure than others, drawn from English medieval and 19th-century industrial architecture, the Palazzo Vecchio in Florence, heroic Modernism, and Louis Kahn's precepts on spatial hierarchies. Not all of these references are immediately recognizable, but they contribute richness to the gallery's austere composition.

From such models the architects derived the Walsall Gallery's distinctive scale, character, and rich variety of spaces. In addition to galleries for the permanent collection, the architects had to provide flexible gallery space for temporary exhibitions, educational facilities, shops, and a restaurant. Like an Elizabethan house, the Walsall Gallery is tall and compact, with a complex arrangement of intersecting volumes that vary in size. Staircases run through the building, linking the main exhibition



The architects treated the Garman Ryan Collection (opposite) almost as a house-within-the-museum, giving it an intimate scale and plenty of wood. On the other hand, the temporary galleries on the upper floors (this page) are bigger and rougher.

spaces with stacked mezzanines on the south side, which are devoted to offices and accommodations for staff, educational programs, and a resident artist. On the first floor is a house-within-a-house containing the Garman-Ryan Collection. Here, a double-height hall is surrounded on two levels by a sequence of small rooms in which works are arranged thematically. From the main staircase on the third floor, visitors get a tantalizing view of the hall and a balcony overlooking it; but, in a teasing fashion, they must descend to get there.

Intimately scaled on the lower floors to accommodate the Garman Ryan Collection, the museum's interiors expand on the fourth floor into a sequence of high-ceilinged exhibition rooms with translucent clerestories. On the fifth floor, the spaces stretch once again—into a double-height restaurant with windows on the east and north. Throughout the building, the simple glazing is sparely framed in stainless steel and inserted flush with the cladding. The placement of windows follows an interior logic, articulating the functions of rooms and spaces, rather than any exterior compositional scheme.

Pattern, material, and texture work with scale to define the character of the various spaces. Within the building's poured-in-place concrete shell, each floor asserts its own identity—heroic in places, intimate and embracing in others. The essential monumentality of the large public spaces is toned down by wood. Exposed concrete displays the imprint and grain of wood forming boards; concrete joists animating ceilings recall fine timber construction. A more obvious echo of tradition is present in the wainscoting of Douglas fir that continues the ghostly traces of the concrete formwork and in the wood that entirely lines the modest spaces of the Garman Ryan Collection. Here, Douglas fir underfoot replaces black-tinted concrete used for floors in the rest of the building.

The museum's physical presence, dignity, and neighborliness work together to create what is now a hit with the public. Local people come here in droves, together with visitors from other parts of the country and, now, from abroad. An essential part of the project's success stems from Jenkinson's social vision and determination. "There are 263,000 people here and we wanted our museum to be accessible to the broadest section of the community, especially to lottery-ticket buyers," says Jenkinson. "We weren't going to cut corners and compromise. We were determined to get a building that was world-class, not second- or third-class." ■

Sources

Terra-cotta tiles: *NBK Janinhof*

Poured-in-place concrete: *Code*

Stainless-steel roof: *TR Freeman*

Flat roof: *Shrewsbury*

Interior stainless steel: *A. Edmonds and Co.*

Ironwork: *Allgood; FSB*

Precast-concrete fire stair: *Birchwood*

Precast-concrete stair treads: *Evans Concrete*

Fire-stair balustrades: *Metallic Fabrications*

Spotlights: *Erco*

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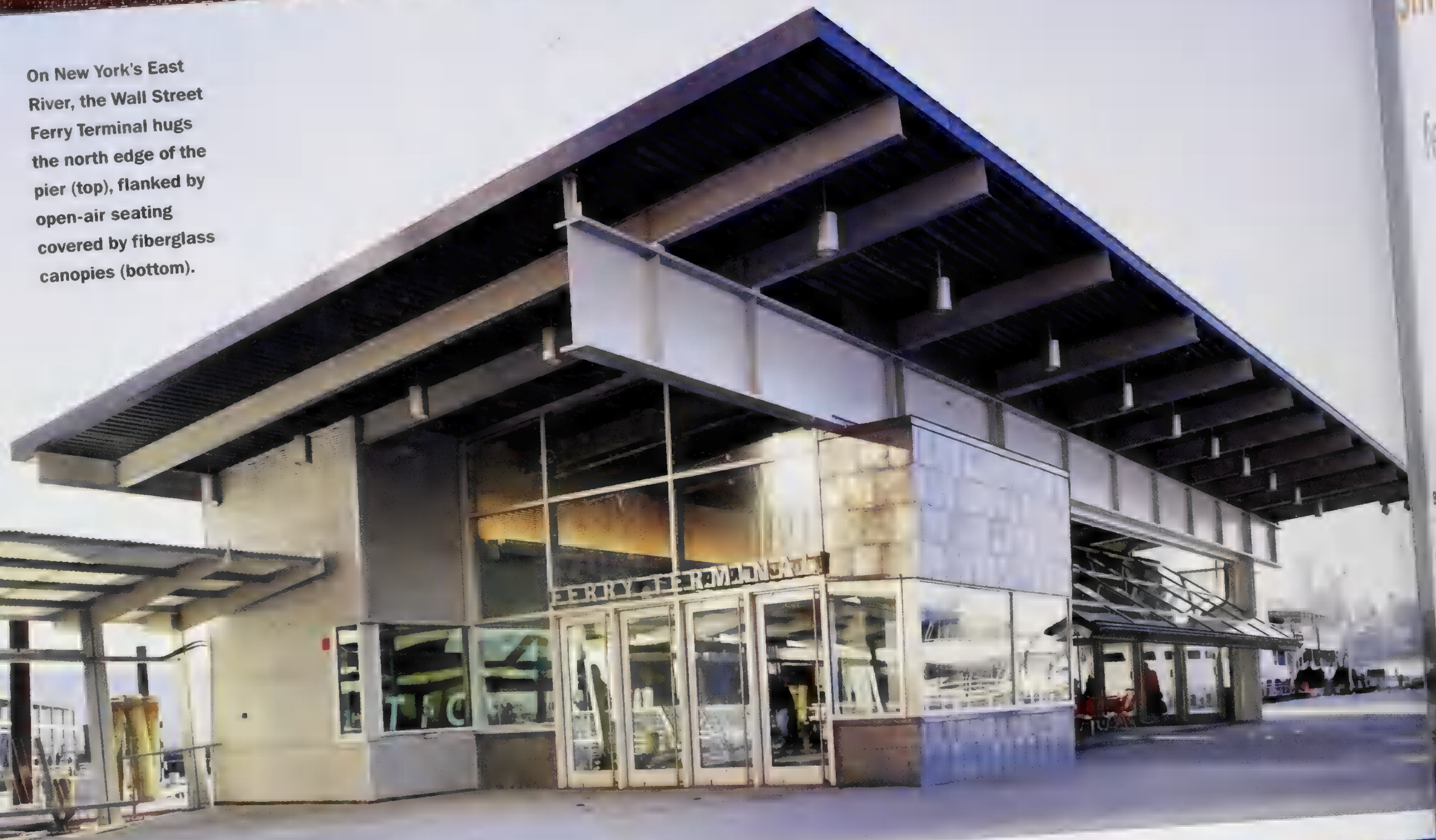
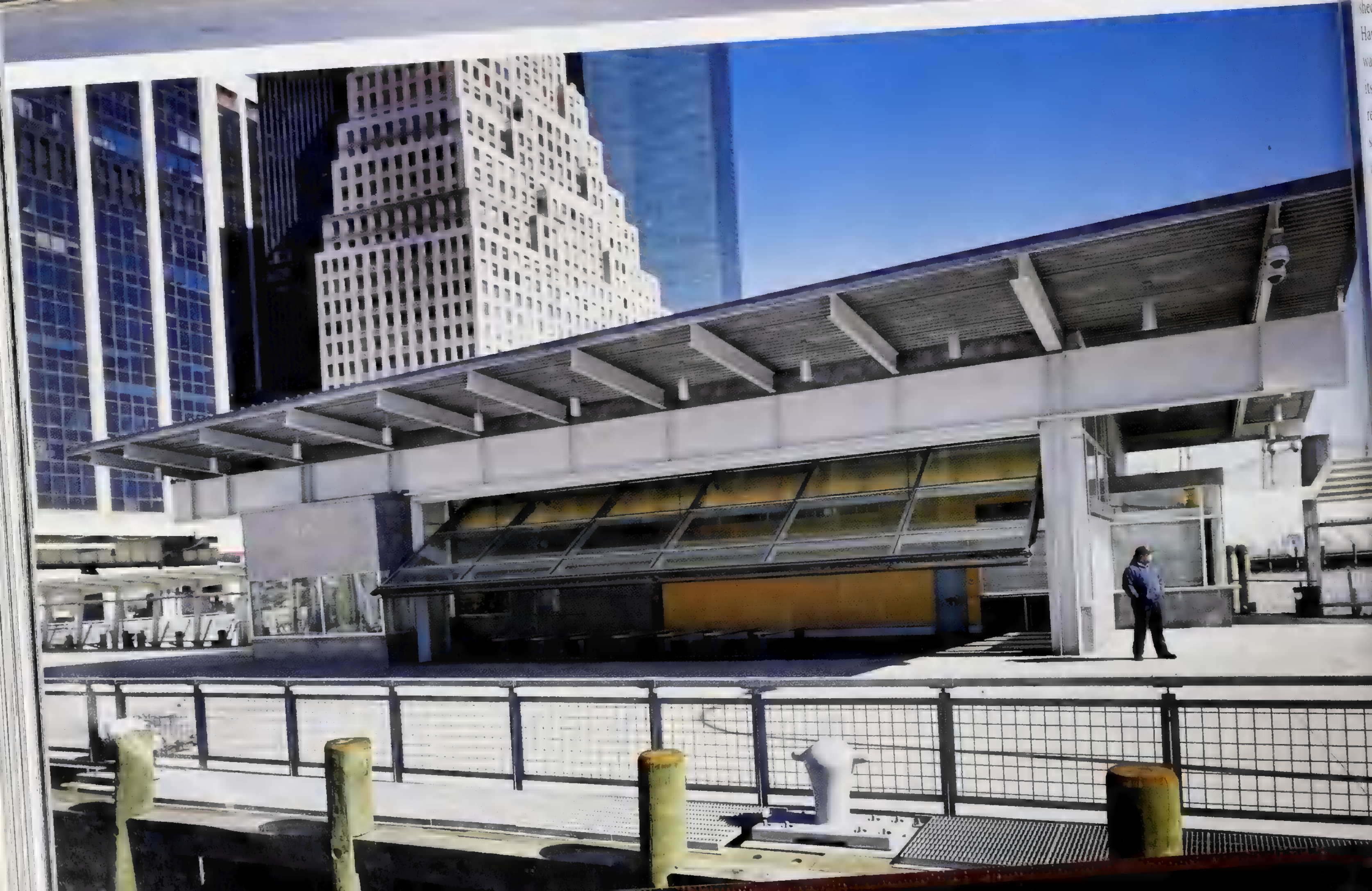
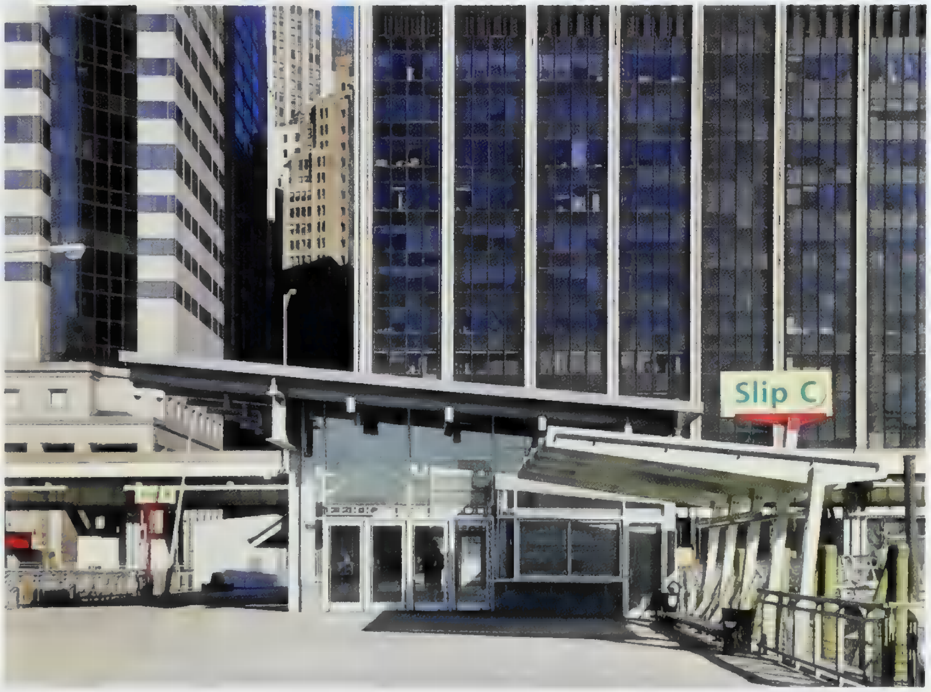
On New York's East River, the Wall Street Ferry Terminal hugs the north edge of the pier (top), flanked by open-air seating covered by fiberglass canopies (bottom).





Smith-Miller + Hawkinson Architects brings architecture to the public realm with a small ferry terminal on PIER 11 near Wall Street.

By Suzanne Stephens



Years ago, historian Nikolaus Pevsner famously pronounced that a bicycle shed is only a building, while Lincoln Cathedral is architecture. It might seem, at a glance, as if the Wall Street Ferry Terminal on New York's East River belongs to the first category. In many ways, it is functionally and typologically an overgrown bike shed. But as Pevsner noted, the difference between a building and architecture can be determined by the structure's engagement with space. In this case, the shed, or rather, terminal, designed by Smith-Miller + Hawkinson Architects, qualifies as architecture in the way it expands the sense of space with the thrust of its linear steel structure and the transparency and reflectiveness of its glass and metal planes. At the same time, it is functional in the good old Modernist sense of providing an array of open and closed waiting areas where Wall Street office workers may linger while waiting for private ferries to New Jersey, Brooklyn, and La Guardia Airport.

For the 2,815-square-foot structure, budgeted at $1.2 million, the architects have deployed an industrial vocabulary with straightforward panache. A steel frame, a glass-and-anodized-aluminum hangar door, a terne-coated steel roof, and galvanized, corrugated-steel paneling for exterior walls compose the main pavilion, while fiberglass- and-steel canopies cover open-air seating extending to the east and west. Most of the structural elements are exposed; however, the counterweight for the hangar door is handsomely sheathed in opalescent corrugated fiberglass. By having the terminal and its offices, support spaces, and seating hug the northern edge of the pier, the architects could turn over a major portion of the pier's open space to commuters who need to get easily and quickly from the riverfront esplanade to the ferries. In warm weather the long hangar door swings up and the pavilion becomes part of the public space, replete with café—which is expected to open as soon as a concessionaire is selected.

This first ferry terminal to be built in decades on the metropolitan waterways is part of a concerted attempt to upgrade architecture in the public realm. The city's Economic Development Corporation and the Department of Transportation's Ports and Ferries division had been sufficiently impressed by Smith-Miller + Hawkinson's rather zoomy ticketing canopies created in the early 1990s for the U.S. Air terminal (designed by William Bodouva) at LaGuardia. It awarded the modestly scaled ferry terminal to the firm in late 1995. Even as a scheme, the terminal received immediate recognition: It was bestowed a design award from the Art Commission of New York City in 1996. More recently, the completed work was featured in the Architectural League's *New New York 2*, mounted last January.

Yet in spite of the promising circumstances surrounding its conception, the ferry terminal now seems to be in the way of another new development, the much acclaimed Guggenheim Museum designed by Frank Gehry. How this happened is a story drenched in irony. After the capital projects unit of the Economic Development Corporation had given the commission for the terminal to Smith-Miller + Hawkinson and had undertaken a $14 million renovation of the pier and Wall Street

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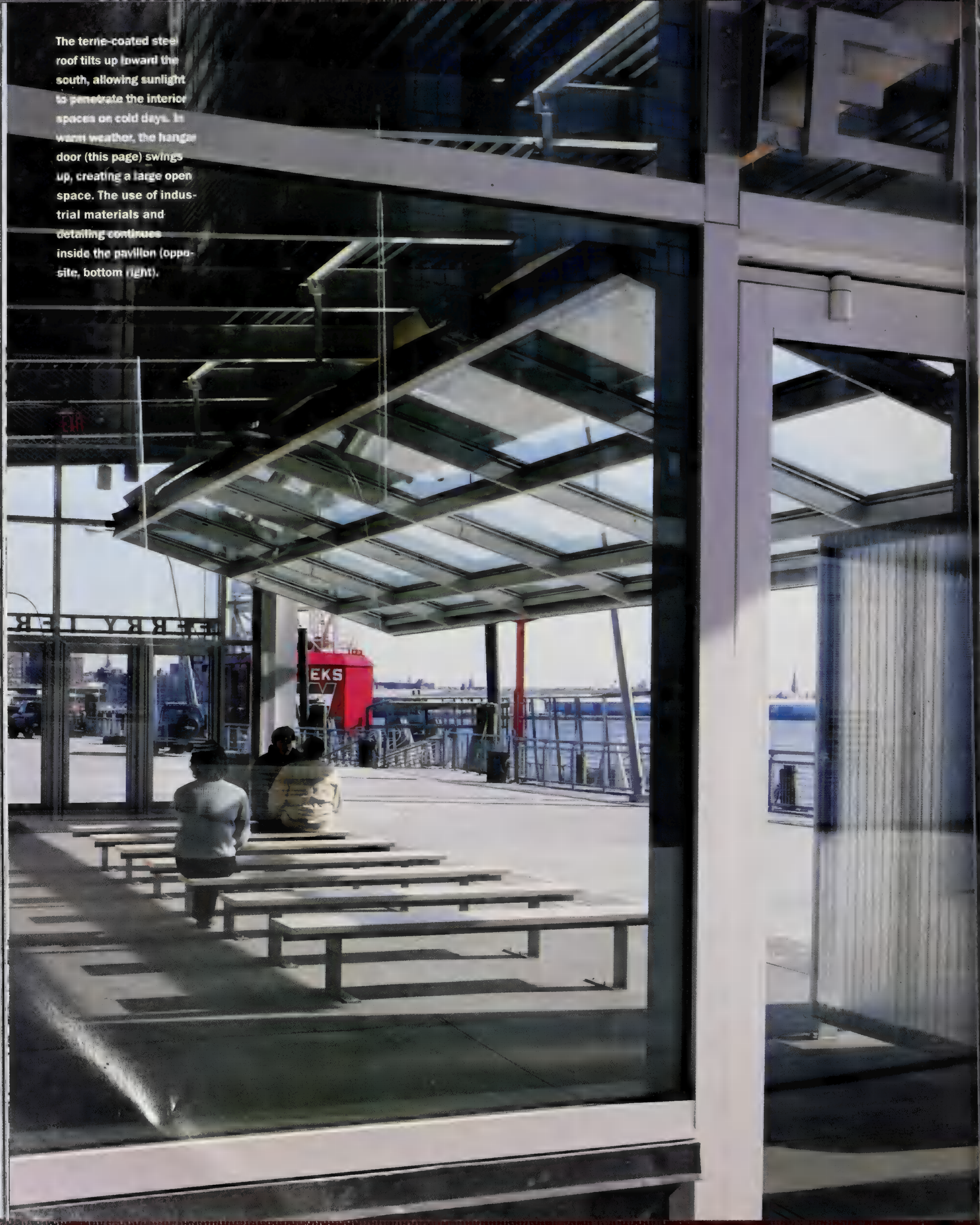
Project: *Wall Street Ferry Terminal, Pier 11, New York City*
Architect: *Smith-Miller + Hawkinson Architects—Laurie Hawkinson, principal-in-charge; Henry Smith-Miller, principal; Alexis Kraft, project architect; Christian Lynch, Nam-ho Park, Starling Keene, Ellen Martin, Todd Rouhe, Karin Taylor, Anne Hindley, design team*
Owner: *New York City Economic Development Corp. and Dept. of Transportation*
Consultants: *Arup (structural, mechanical, electrical, fire safety, and sanitary); Judith Heintz (landscape); Claude Engle (lighting); Frederic R. Harris (general contractor)*



The terne-coated steel roof tilts up toward the south, allowing sunlight to penetrate the interior spaces on cold days. In warm weather, the hangar door (this page) swings up, creating a large open space. The use of industrial materials and detailing continues inside the pavilion (opposite, bottom right).

esplanade, EDC's commercial real-estate arm selected the Guggenheim Museum to proceed with a development plan for land including Piers 9, 11, 13, and 14. The only trouble is that Gehry's hugiyama scheme embraces (shall we say, swallows?) the territory on which the ferry terminal sits. The EDC states it cannot really predict what will happen to the newly built terminal, since details of the Guggenheim scheme are still being negotiated. It will only say for the record, "The design will incorporate a ferry pier."

Meanwhile, the 570,000-square-foot Guggenheim project has to pass the environmental and traffic hurdles required in the approval process. The situation is ambiguous, to say the least. In the best of all worlds, Gehry's Guggenheim—the latter-day equivalent to Lincoln Cathedral—and Smith-Miller + Hawkinson's ferry terminal—the latter-day bicycle shed—would both be recognized as "Architecture" vital to the public realm. After all the effort to upgrade public architecture, the agency that gave us both schemes might end up virtually taking one away. As they say, only in New York. ■

Sources

Metal-and-glass curtain wall: *Kawneer*

Aluminum windows and doors: *Kawneer*

Terne-coated steel roof: *Follansbee Steel*

Hangar door: *Fleming Steel*

Glazing: *PPG Industries*

Locksets: *Mortise Schlage*

Hinges: *McKinney, Rixson*

Lighting: *Zumtobel, Edison Price*

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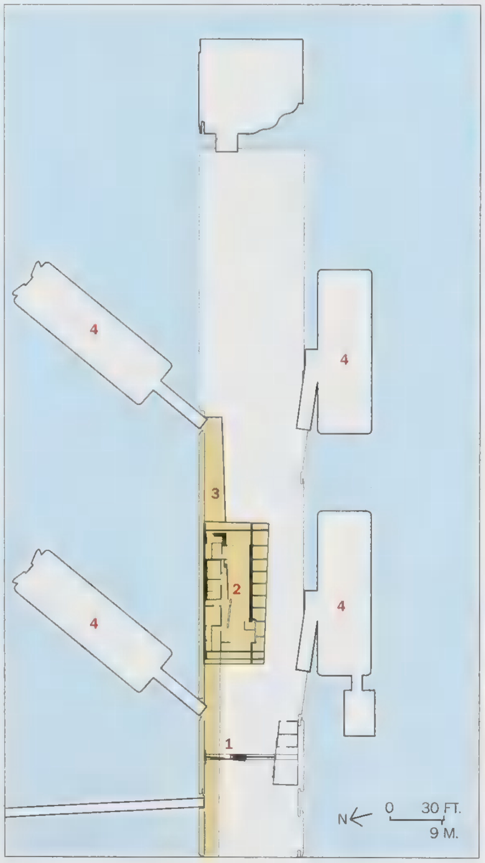
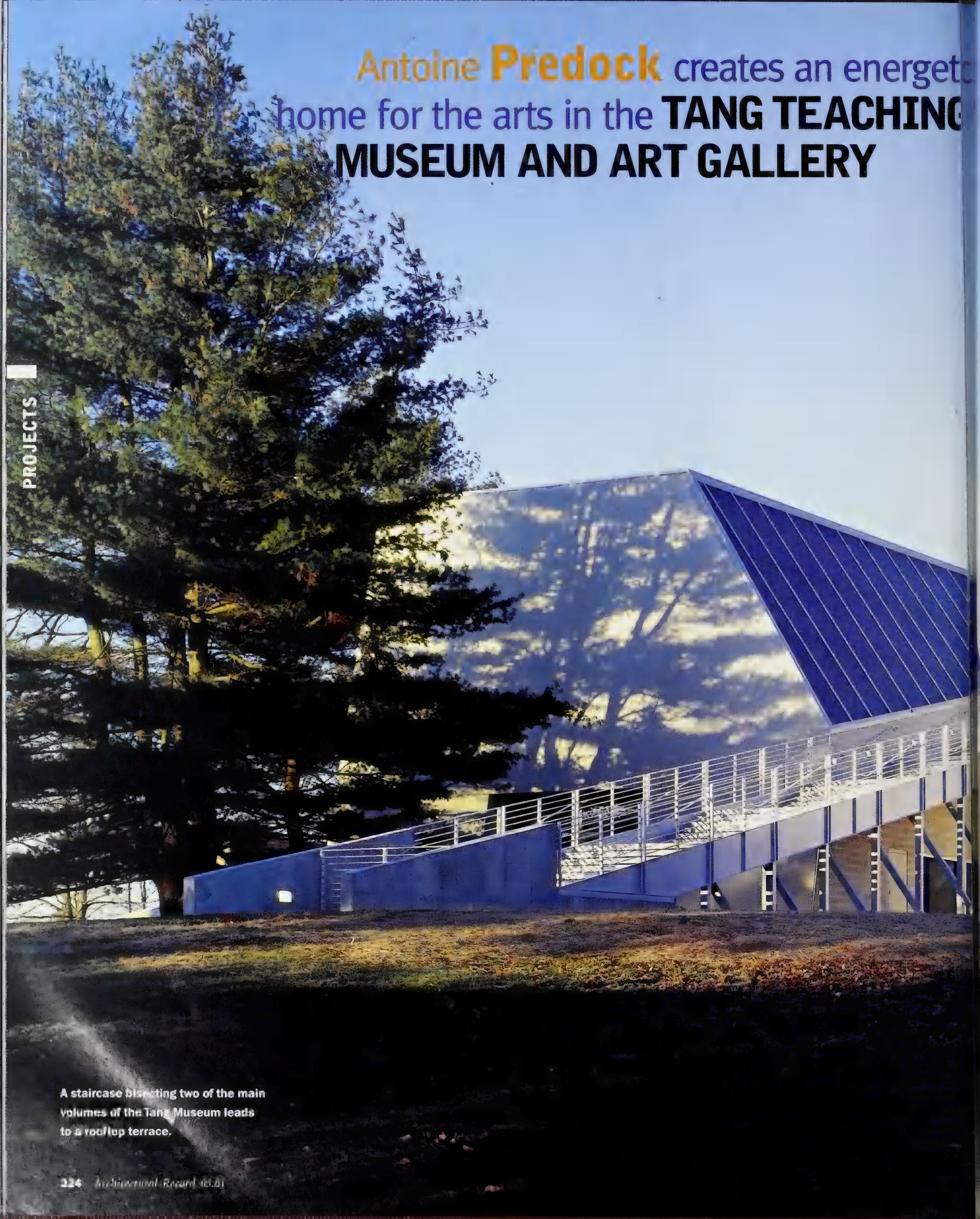


1. *Entry gate*
2. *Terminal pavilion*
3. *Outdoor seating*
4. *Ferry slips*

Antoine **Predock** creates an energet home for the arts in the **TANG TEACHING MUSEUM AND ART GALLERY**



A staircase bisecting two of the main volumes of the Tang Museum leads to a rooftop terrace.

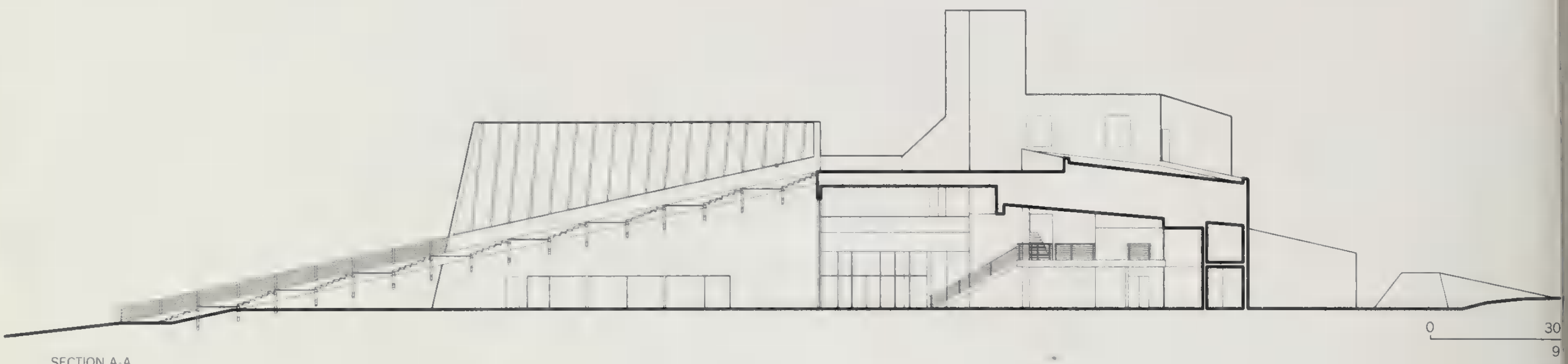
PHOTOGRAPHY: © TIMOTHY HURSLEY

By John E. Czarnecki, Assoc. AIA

Students are all over the Tang Teaching Museum and Art Gallery at Skidmore College. They hang out on the rooftop terrace and often cross through, over, and around the museum, located at a major pedestrian crossroads of the campus. Tracks in the snow up the sloping roof indicate attempts to literally sled off the building in winter. Architect Antoine Predock, FAIA, intended the museum, his first public building in the Northeast, to be open to manipulation and full of life and energy. His building is a radical departure from the rest of the well-planned but architecturally dull campus and quaint Victorian vernacular of the nearby town of Saratoga Springs, N.Y.

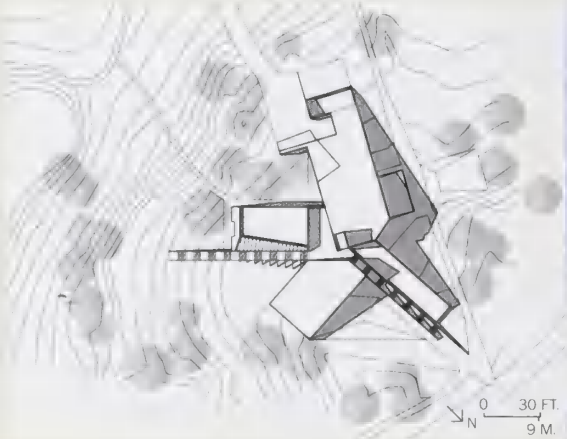
Skidmore College, a liberal arts college of 2,200 students, wanted a truly interdisciplinary teaching museum, not a static building. The college selected Predock in a competition that included Robert Venturi, FAIA, and Frank Gehry, FAIA. The architect-client relationship proved to be a perfect match because Predock is fascinated with what he calls "the ephemeral in America" and has long been interested in dance, music, and art. "I just felt at home [with Skidmore College]," Predock says. "It all felt very right."

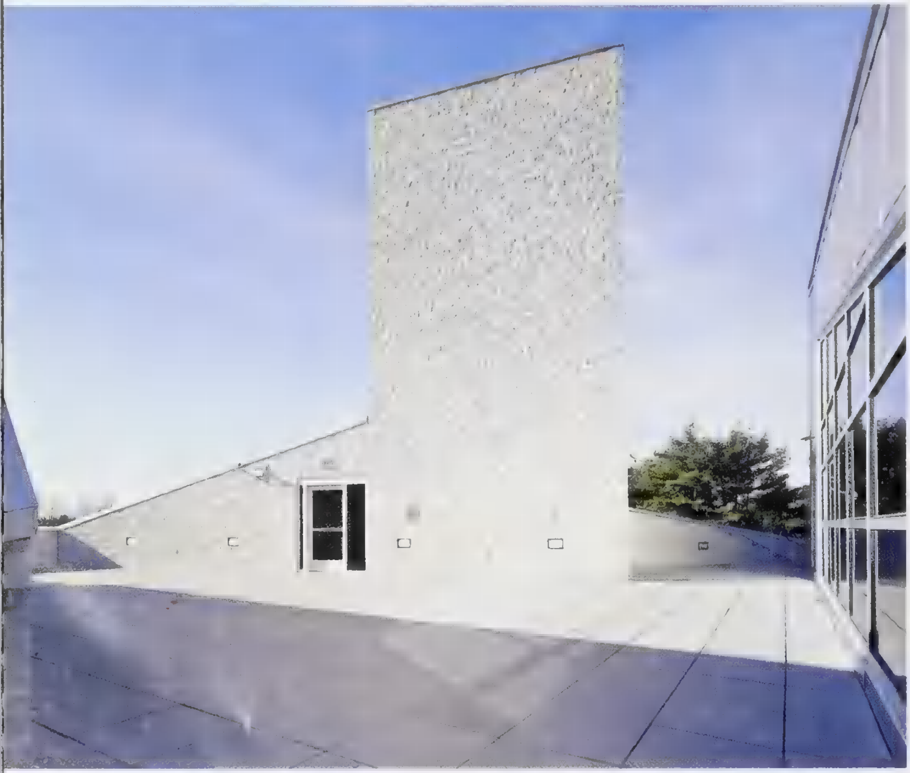
Located on a major pedestrian path through the Skidmore campus, with two staircases (left) that lead over the building, the Tang Museum was designed for serendipitous encounters.

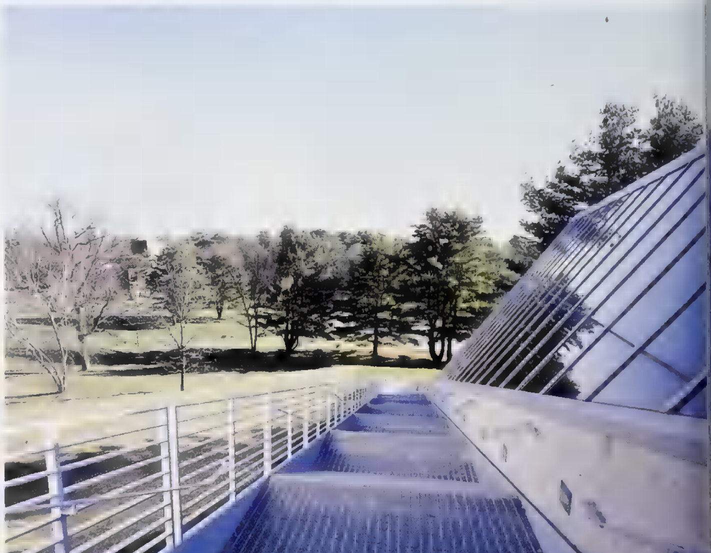


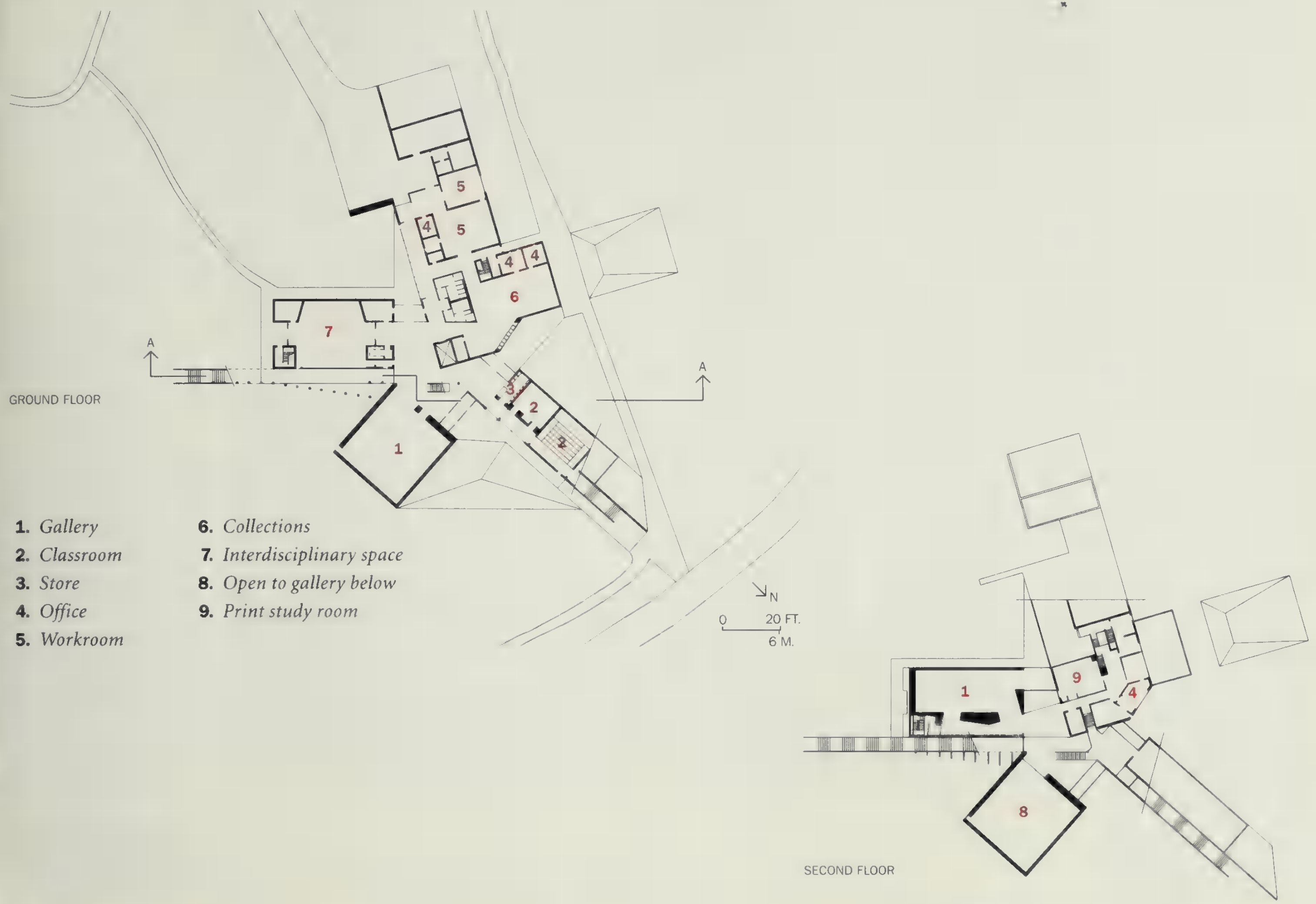
SECTION A-A

The Tang Museum (right) is tucked within a circle of white pines on a gentle slope. The orientation of the building masses relates to existing paths on campus. The rooftop terrace (below left) is becoming a gathering place for students. One of the staircases (below right) is immediately adjacent to glazing that provides natural light to the second-floor gallery.









1. *Gallery*
2. *Classroom*
3. *Store*
4. *Office*
5. *Workroom*
6. *Collections*
7. *Interdisciplinary space*
8. *Open to gallery below*
9. *Print study room*

While typically a liberal arts curriculum might require students to move between a number of classrooms in separate campus buildings, the Tang is a model of how academic departments can coexist in a single structure. Here, students and faculty from a number of disciplines, including the arts, history, science, and anthropology, hold classes, study, or exhibit artwork in a gallery space. With the Tang, Skidmore College is demonstrating its commitment to crossdisciplinary philosophy. "[Skidmore] had very ample rhetoric about interdisciplinary pedagogy—it's a buzzword now," Predock says. "At Skidmore, they really deliver on it."

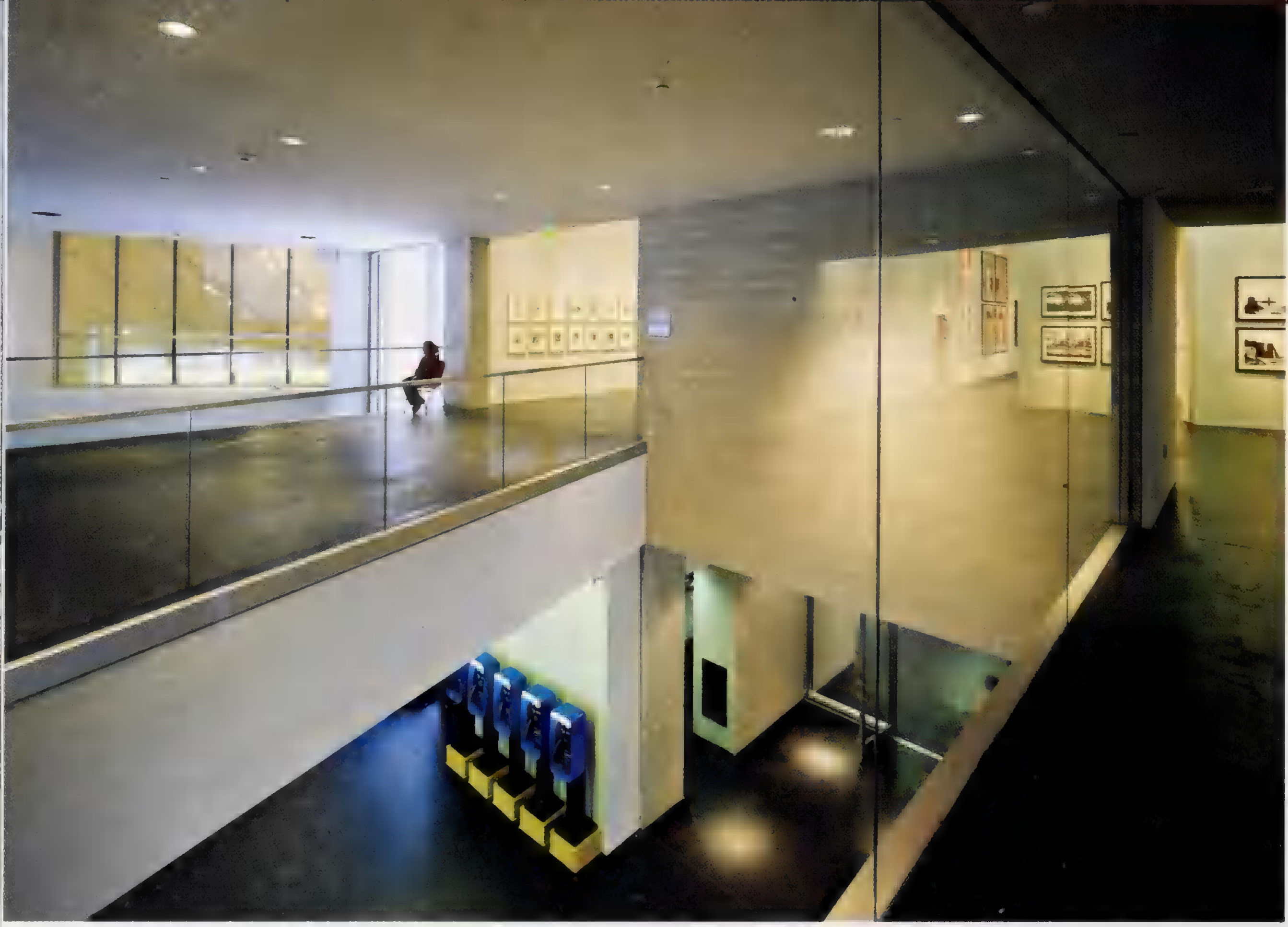
To explore potential multidisciplinary aspects of the building while developing the schematic design, Predock read Howard Gardner's *Theory of Multiple Intelligences.* The theory proposes that in addition to the two kinds of intelligence most commonly taught, tested, and reinforced (verbal/linguistic and logical/mathematical), there are at least eight other kinds of intelligences that are equally important, including visual/spatial, bodily/kinesthetic, musical, interpersonal, and intrapersonal. "[Gardner's theory] really opened up the notion of body and mind that is expressed in the building quite overtly," says Predock, who, armed with Gardner's theory, sought to plan for every possible serendipitous encounter in Tang. As a result, the Tang snares people, engaging them as active participants.

The Tang clearly demands to be noticed as an object building, rather than as a background building that is part of a campus ensemble. Skidmore's campus, although coherently planned with a central quad, is a collection of mostly 1960s redbrick buildings that have a sameness about them. Rather than siting the Tang on the quad, as Skidmore College had originally planned, Predock preferred a more open, natural site on a gently sloping hill. Here, the Tang can be read as an object that is public space, indoors and out. It's too early to tell, though, if the campus has fully embraced this anomaly.

The three main wings of the building line up with pedestrian circulation routes through campus. Two metal exterior staircases, 140 feet and 120 feet long, respectively, rise above the museum and merge on an upper-level terrace—the pinnacle of the building. While the stairs are prominent, the three ground-level entrances are somewhat hidden from view. A main entrance is not immediately apparent, and perhaps this unexpected hierarchy is what Predock intended.

As with many Predock buildings, the Tang was designed to be

Project: *Tang Teaching Museum and Art Gallery, Saratoga Springs, N.Y.*
Architect: *Antoine Predock Architect—Antoine Predock, principal-in-charge; Devendra Contractor, senior associate-in-charge*
Associate architect/architect of record: *Einhorn Yaffee Prescott—Tom Birdsey, principal-in-charge; John Sobiecki, project manager; David Clemenzi, project architect*
Engineer: *Paragon Structural Design (structural); Saratoga Associates (civil/site); Einhorn Yaffee Prescott (mechanical/electrical/plumbing)*
Landscape: *Saratoga Associates*
Lighting and acoustics: *Einhorn Yaffee Prescott*
General contractor: *Barry Bette & Led Duke*



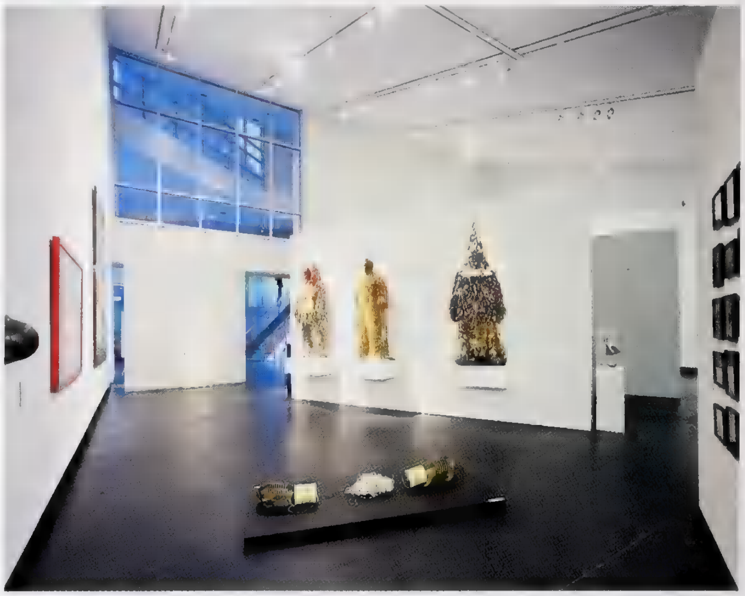
Transparency within the building allows views from a second-floor gallery space (left) to a pedestrian bridge and the lobby below. From the staircase in the lobby (right), one can see into galleries on both floors. The ladder and phones were part of an exhibit on sound.

of the earth and to engage the earth—as if it was absolutely meant to be within the shade of a seemingly sacred circle of white pine trees. Predock wanted the building to relate to the limestone outcroppings around the campus, left from glaciers that receded. He would have loved to have clad the building in stone, but the construction budget for the 30,000-square-foot museum was a mere $8.2 million, limiting the palette of possible building materials. A few aspects of Predock's original design, including vegetation on at least one of the sloping roofs, were ultimately omitted.

Still, Predock made the most of fairly conventional building materials, such as concrete masonry block and steel. Concrete masonry units were used for exterior cladding and masonry bearing walls, while a fairly straightforward steel structure was used for specific portions of the building, such as the main gallery, which are clad in metal panels. With these rather ordinary building materials, Predock offers an example of how the art of architecture can transcend mundane building construction. "For a modest-scaled budget, we put together a pretty impressive building," said Tang director Charles Stainbeck. "Our whole point was to redefine what a museum could be."

Stainbeck is thrilled to direct a museum that is driven by ideas, not by artifacts or collections, and one that offers possibilities for learning throughout. Exhibitions are held in two galleries, one on each floor, but artwork can be viewed elsewhere as well: Ground-floor storage spaces, for example, have windows to the outside, and selected works in storage, such as pottery, are placed in the windows as a kind of showcase.

On the interior, windows offer views and permit daylight to filter from the two-story lobby to exhibition spaces, a second-floor print room, and office spaces, allowing traditional museum hierarchies to break down. "It's a kind of demystification of the museum," Predock says. "That unexpected moment is really fabulous." ■



Sources

Masonry: *Custom blend split-face CMU as supplied by Dagostino Building Blocks, Schenectady, N.Y.*

Metal/glass curtain wall: *Kawneer 1600 Curtainwall system, Supersky Products (sloped glazing)*

Metal roofing: *Overly Manufacturing Company (precision profile—metal cladding)*

Steel windows: *Overly Custom SS*

Aluminum windows: *Kawneer 451T*

Interior lighting: *Lightolier, Yorklite, Concealite, LSI*

Exterior lighting: *Bronzelite, Exceline, Cardco, Hadco, Celestial Lighting*

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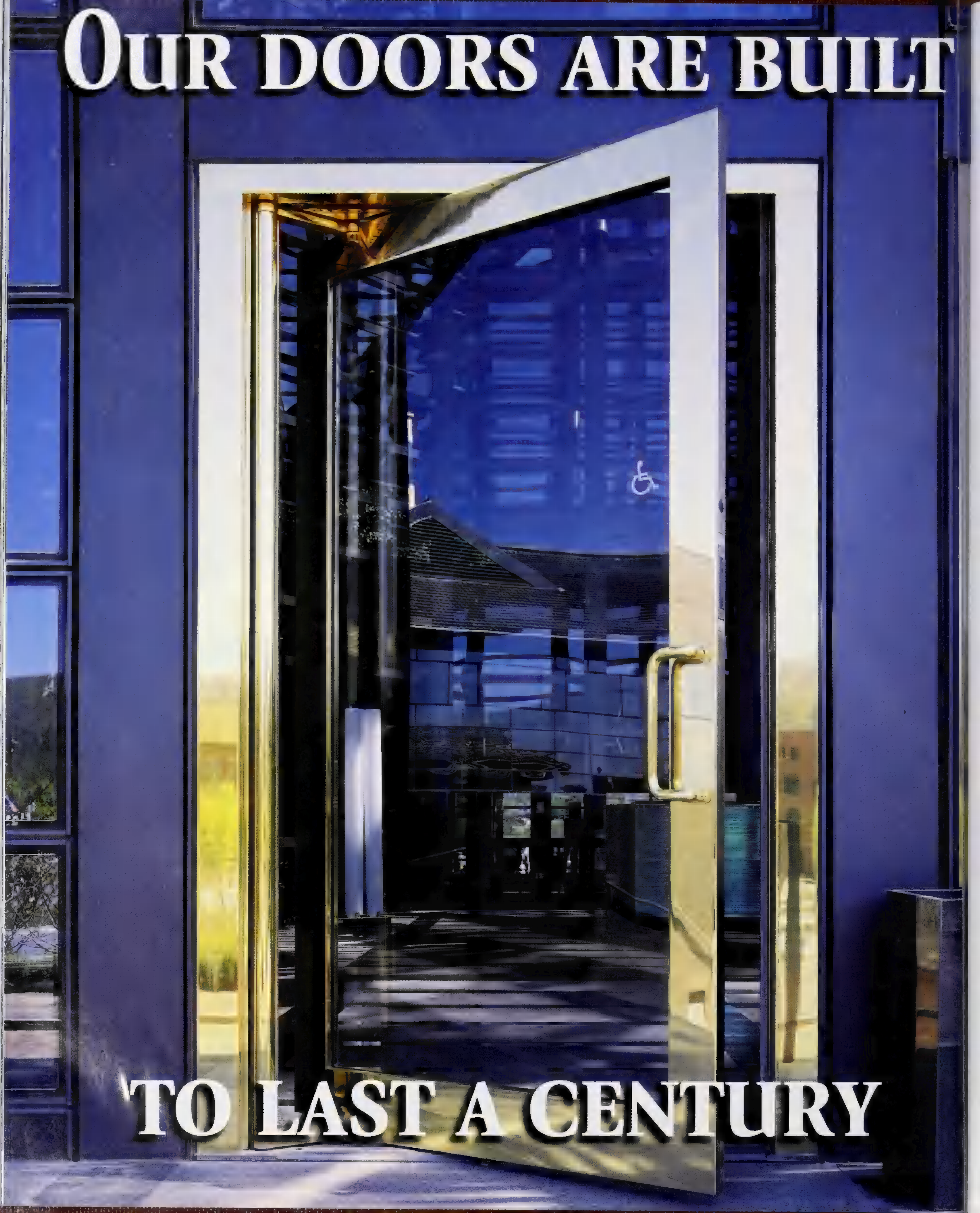
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HOTELS

Rooms with a Viewpoint

THE PROLIFERATION OF HOTELS WITH A DESIGN-CONSCIOUS APPROACH IS FEEDING A GROWING PUBLIC APPETITE FOR FANTASY AND FORM AS WELL AS FUNCTION.

By Suzanne Stephens

It has been a good year for "designer" hotels. True, 1998 was the peak year for all hotel construction, when $9.1 billion was spent for over 93 million square feet, according to figures provided by the F.W. Dodge division of the McGraw-Hill Companies. While the figures recently have been dropping, due to overbuilding of the limited-service storage-bin-type hotels, other more comfortable forms of accommodation, including resort, central-city, and convention-center hotels, are still on a roll. Current projects for this year come to a total of $7.6 billion for 69 million square feet of hotel construction—not bad compared to the recession-hobbled 16.4 million square feet built in 1991. As can be seen from the selection on the following pages, and additional ones on architectural record's Web site, www.architecturalrecord.com, designer hotels are arguably the most visible and seductive element in this economic picture.

In the hands of Jean Nouvel, a small building in Lucerne, Switzerland, has been transformed into a hotel by a three-dimensional manipulation of section and plan, augmented by a two-dimensional exploration of reflective surfaces and cinematic imagery. In the case of a really low-budget renovation, the Royal Hotel in Miami Beach, Fla., by Jordan Mozer, custom furniture is made to do most of the architectural work. At the Enchantment Resort in Sedona, Ariz., a complex of new buildings by Gluckman Mayner takes advantage of the landscape, dramatically integrating indoor and outdoor spaces. And, as demonstrated so vividly by Philippe Starck's design for Hudson, the mega-hip (1,000-room) hotel in New York City, space, scale, material, and quirky objects, combined with a certain madness, are all you need.

In terms of raising architectural awareness with the American public, all this is good news. But more architects and designers need to be attuned to the functional (as well as aesthetic) desires of their multiple clients. We may be willing to have a tiny ship cabin for a room, but we want a counter for toiletries in the bathroom, and storage drawers somewhere to unpack (and find) things. In terms of ambience, it would seem obvious that color, lighting, and scale of furniture need as much attention as spatial planning, but often architects seem too wary of being decorator-y to take risks. That is why this selection of hotels emphasizes bold furniture design, eccentric objects, idiosyncratic colors, and unusual or exotic materials. Much of the architectural opportunity—particularly with hotels in renovated buildings—is on that level. It does make the difference. ■

1.

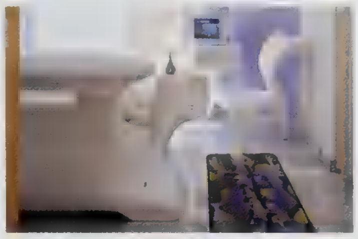
Lucerne, Switzerland

Paris architect Jean Nouvel plays two-dimensional and three-dimensional effects against each other in his design for The Hotel.

2.

Sedona, Arizona

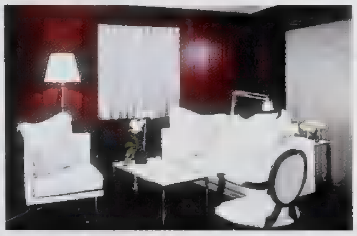
The New York firm of Gluckman Mayner brings its minimalist imprimatur to the design of Mii amo spa and casitas.



3.

Miami Beach, Florida

Jordan Mozer of Chicago shows how you can create a quixotic, low-budget getaway by the sea at the Royal Hotel.



4.

New York City

The French designer Philippe Starck once again gets the joint jumping for hotelier Ian Schrager at Hudson.

www

For additional hotels and more information on the people and products involved in the following projects, go to Building Types Study at ***www.architecturalrecord.com***

The Hotel
Lucerne, Switzerland

1

JEAN NOUVEL ENGAGES IN A RICH PANOPLY OF OPTICAL AND SPATIAL EFFECTS FOR A SMALL LUXURY HOTEL RENOVATION.

By Suzanne Stephens

Architect: *Architectures Jean Nouvel, Paris, France—Jean Nouvel, principal; Denis Laurent, Matthias Raasch, project managers; Emmanuelle Lapointe, Antonia Pesenti, design team; Bertrand Voiron, furniture design; Odile Soudant, film still research*
Client: *Urs Karli*
Consultants: *Alain Bony (painting, colors, ceiling concept); Thomas Bricchi, Zurich (restaurant design); Romano Bassi (graphics); Rebsamen Electroplanung (electrical engineers); Société Scanachrome (ceiling images); Walter Stadelmann (construction management)*

Size: *15,000 square feet (net)*
Cost: *$4.9 million*
Completion date: *2000*

Sources
Stainless steel and Jatoba wood furniture: *Jean Nouvel Design; Hartmann AG, manufacturer*
Seating: *Jean Nouvel Design; Poltrona Frau, manufacturer (guest rooms); Montina (restaurant)*
Glass: *Saint Gobain*
Stainless steel window frames: *Mevo*
Ceilings and light boxes: *Hartmann, AG*
Lighting fixtures: *Jung*

WWW
For additional hotels and more information on the people and products involved in this project, go to Building Types Study at **www.architecturalrecord.com**

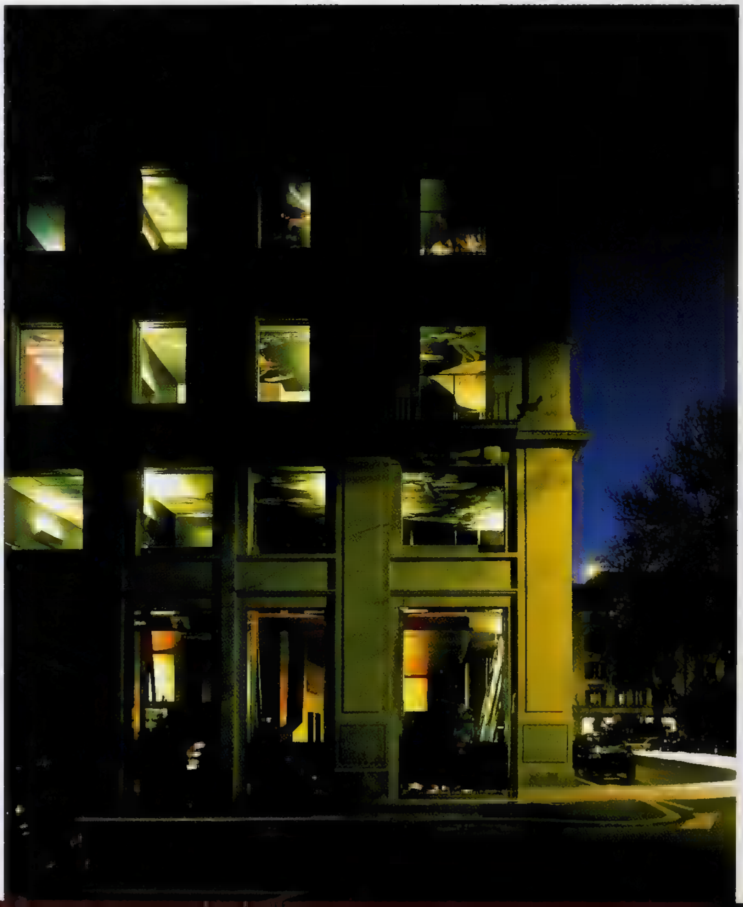
The situation

In 1998, the Lucerne Culture and Convention Center, designed by French architect Jean Nouvel, brought a beyond-Mies bravura to the old, picturesque Swiss town. This major modern insertion along the lake convinced Lucerne restaurateur and hotelier, Urs Karli, that the town could use a correspondingly dramatic statement to house visitors who would be coming to hear, for example, Sir Neville Marriner conduct the Lucerne Symphony Orchestra. Karli found a seven-story building, formerly a school, office building, and apartment house, facing a park, which, however, had no water view. In creating a luxury caravansary with 25 guest rooms, plus a 70-seat restaurant and a bar, Nouvel was given a reasonable amount of free rein: he just had to make the $4.9 million renovation competitive with the grand hotels on the mountain with their views of the lake. The clientele Karli had in mind would be fairly affluent (room rates typically range from $244 to $287), with the sort of vanguard taste that eschews chandeliers and marble or chalet-style quaintness in a hotel.

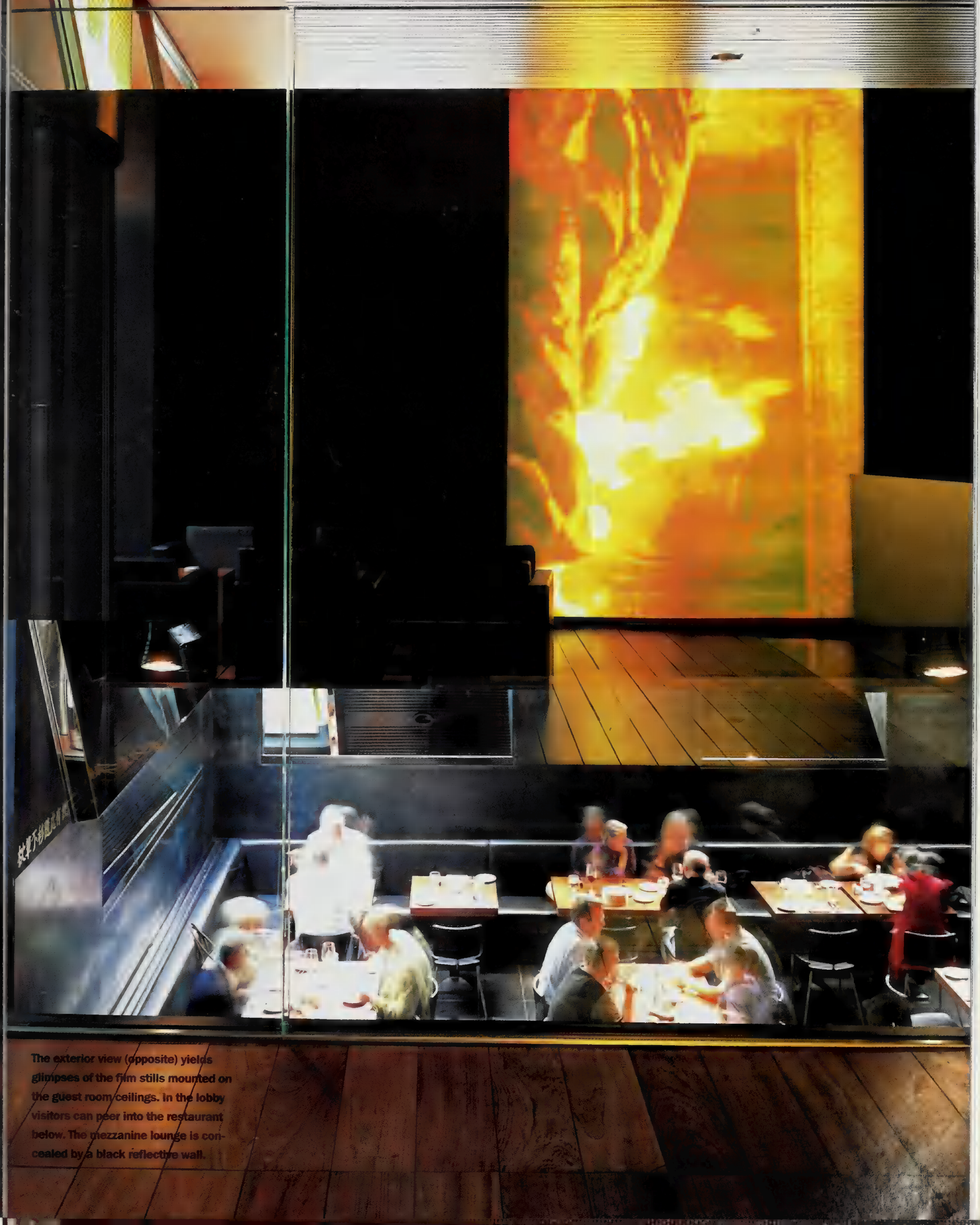
The solution

The guest rooms (generally 382 to 578 square feet) are designed to be sensually modernist and comfortably spare. Whereas a normal hotel with the slightest pretense of luxury and comfort would have wall-to-wall carpeting and billowing draperies on the windows, The Hotel offers guest rooms with deeply burnished wide-plank wood floors and push-button-operated blinds inserted between two panes of glass. Nouvel designed all the sleekly modular furniture to be wrapped in matte stainless steel, with horizontal surfaces topped in a Jatoba (Brazilian cherry) wood. The ceiling is another story—indeed it is *the* story. For here Nouvel selected stills from 25 films by directors ranging from Bunuel and Fellini to David Lynch and Peter Greenaway, and had them printed and mounted to the ceiling. "Film is our version of the Greek myths," he explains.

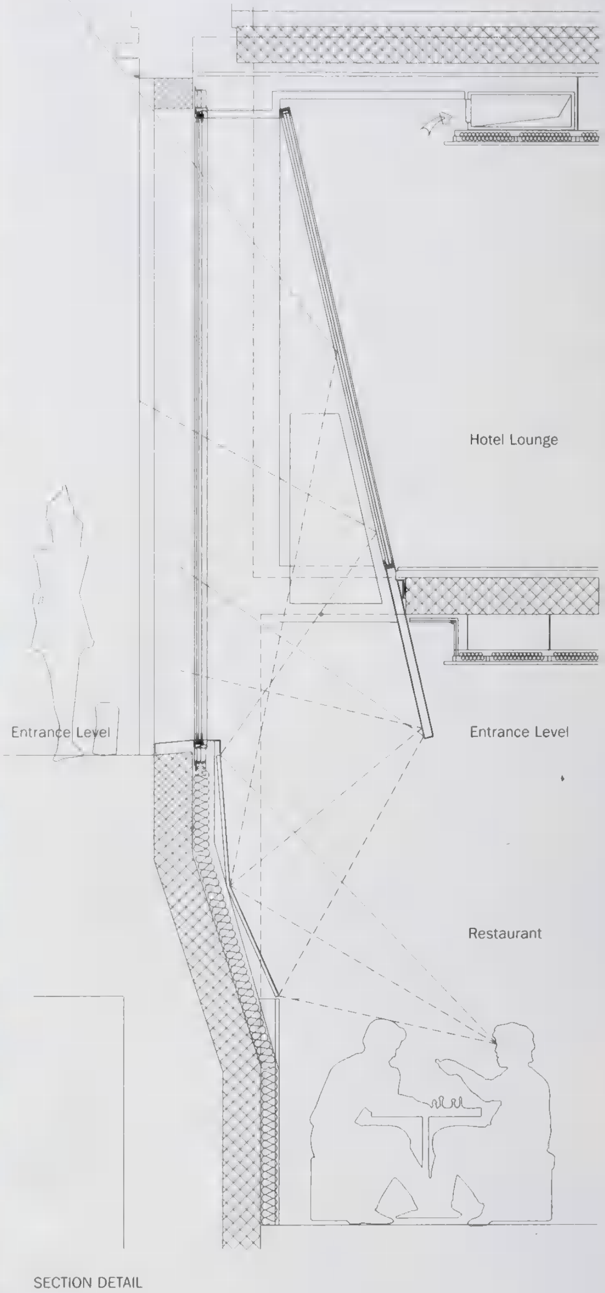
The images, which appear to involve a romantic or tense moment in the film (sometimes it's hard to tell), mix a dark and vibrantly hued palette, softly lighted by wide wall-mounted sconces. In addition, Nouvel, working with artist Alain Bony, tinted each of the rooms' dark



PHOTOGRAPHY: ©



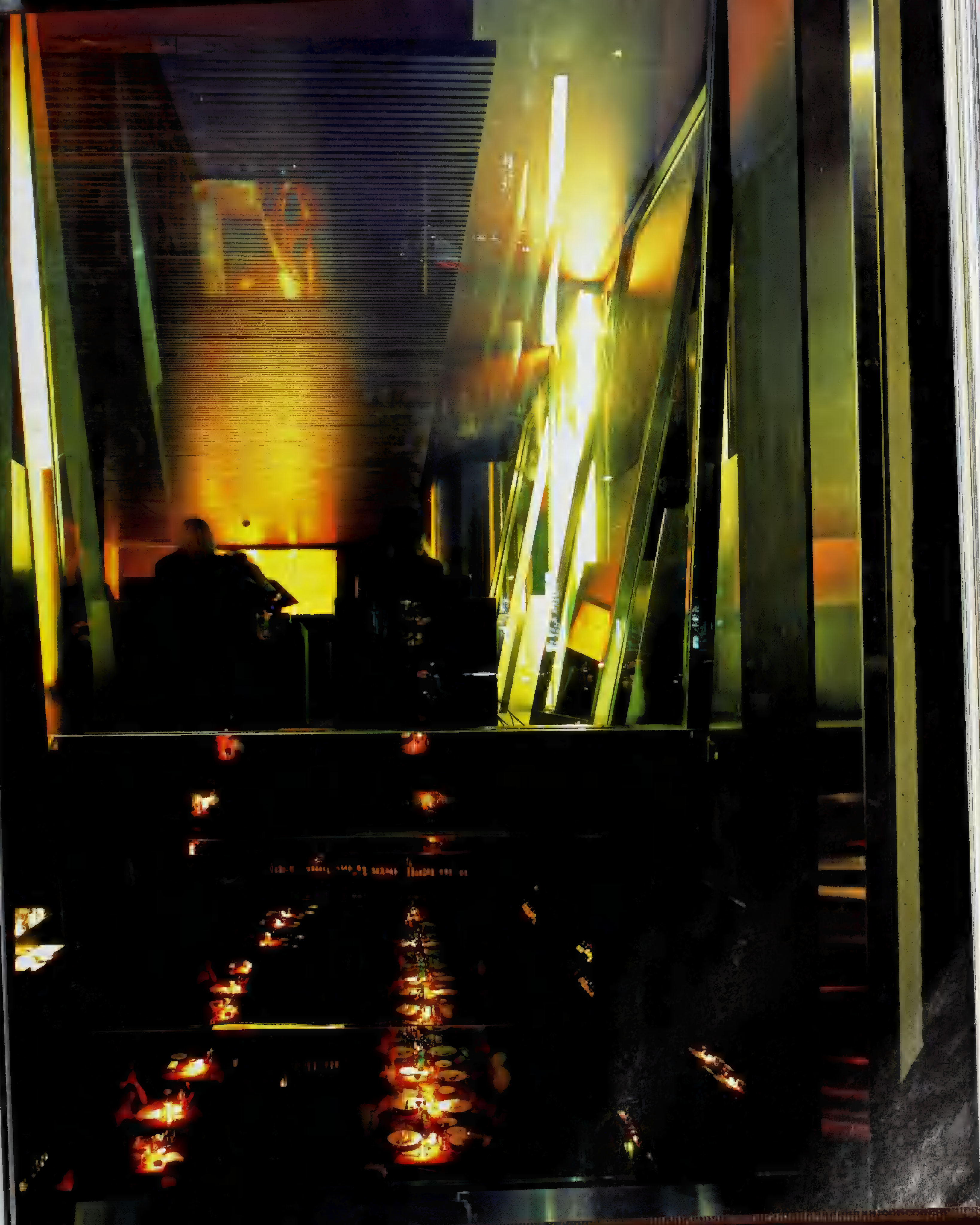
The exterior view (opposite) yields glimpses of the film stills mounted on the guest room ceilings. In the lobby visitors can peer into the restaurant below. The mezzanine lounge is concealed by a black reflective wall.



SECTION DETAIL

The lobby's stainless-steel reception desk (top) is flanked by a backlighted film still. In the restaurant downstairs canted mirrors reflect light and scenery thanks to the windows upstairs. Viewing the bar (opposite) through the windows on the street increases the sense of spectacle within.

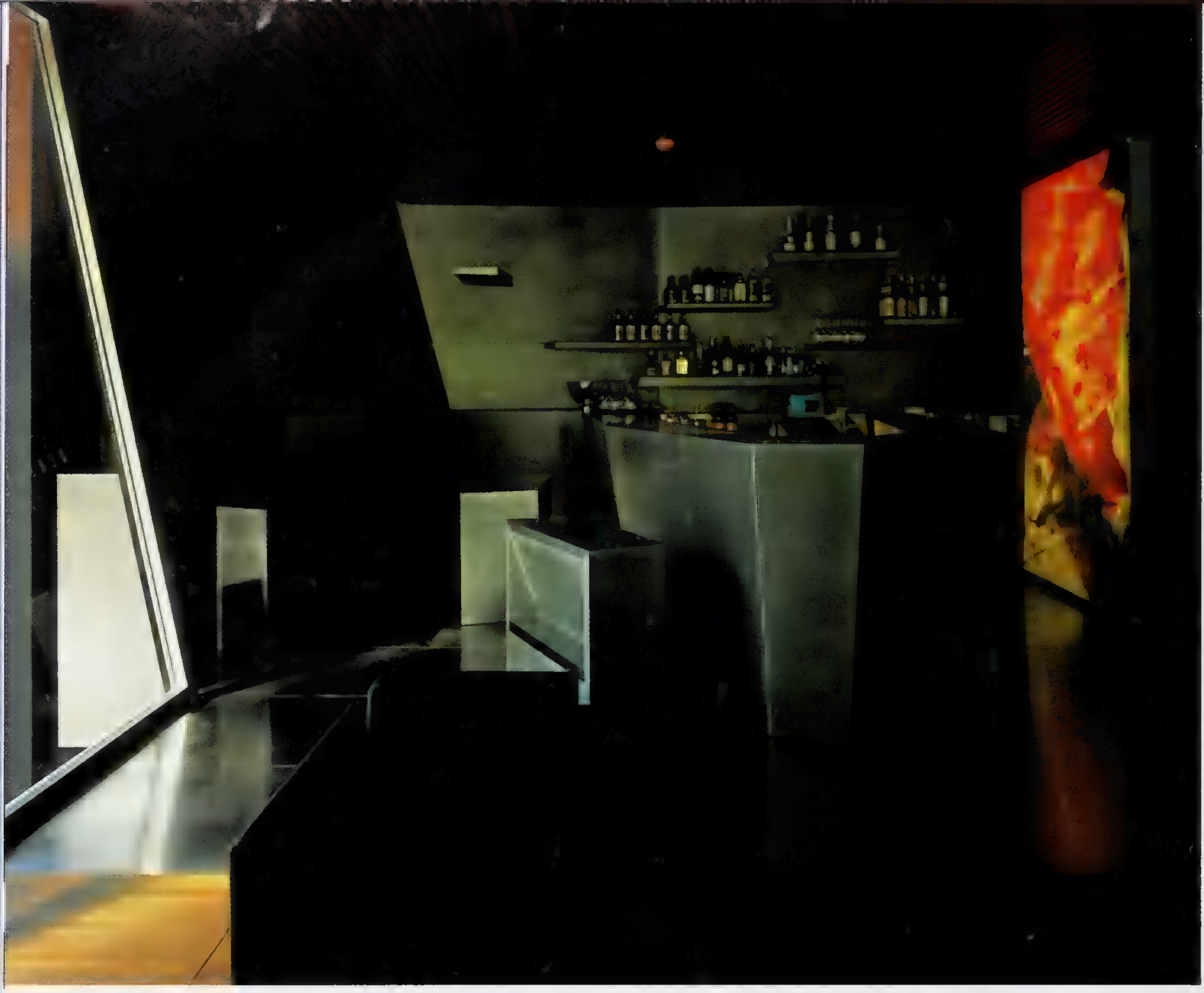
PHOTOGRAPHY: © PHILIPPE RUAULT



walls to look something like blurred afterimages of the film stills above. The abstract effect adds a rich effulgence to the dark walls, without detracting from the ceilings.

Downstairs, Nouvel opened up the public spaces by having the lobby occupy one-half of the ground floor with the bar and restaurant in a stacked arrangement on the other half: The bar occupies a mezzanine overlooking the lobby, while the restaurant is carved out of the lower level. Entering the lobby you can peer down into the restaurant through a low glass window; however, the mezzanine bar is concealed behind a high, black parapet wall. Instead you see the reflection of a backlighted film still mounted on the wall behind you (see photo on page 239).

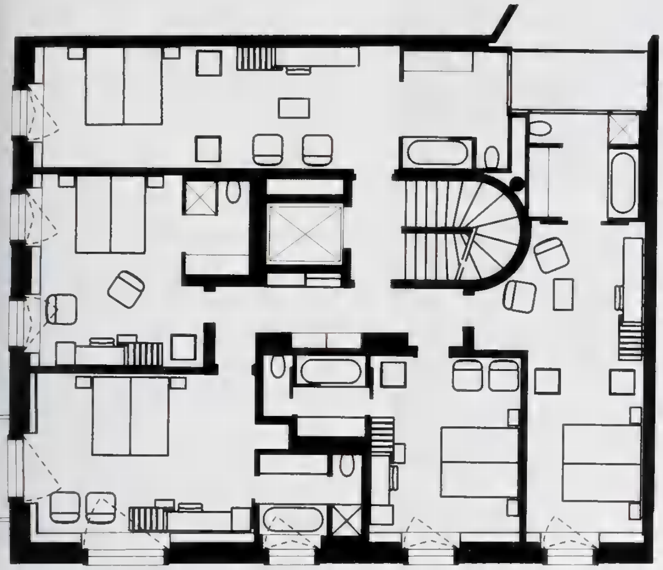
The subterranean restaurant, with its black pigmented walls, receives a striking amount of daylight via vertical slots of space around the perimeter that extend up past the mezzanine bar to the double-height ceiling. At street level, Nouvel installed floor-to-ceiling windows, which are canted inward. Below grade, the windows are optically extended by two mirrored panels placed at angles to both refract daylight into the restaurant, as well as reflect fragments of the outdoor scenery above.



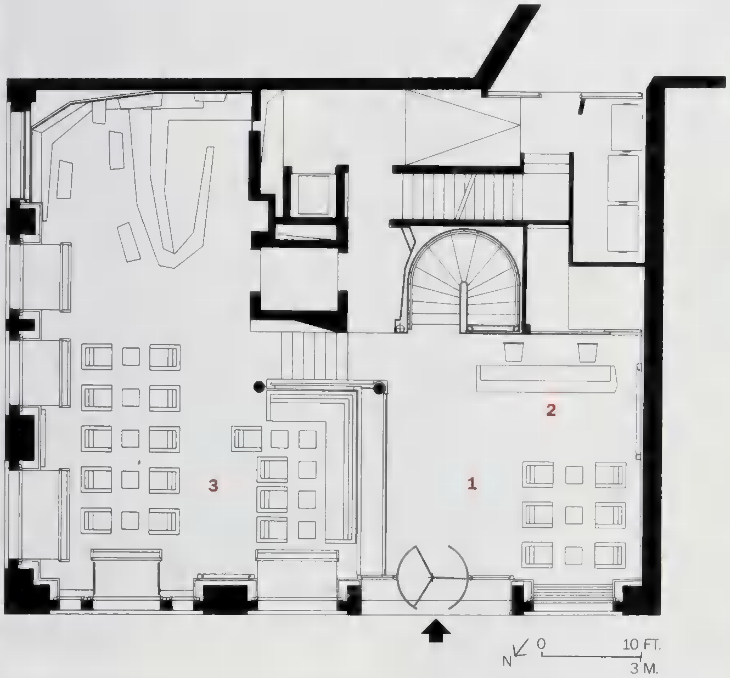
Nouvel designed the bar on the lobby's mezzanine (above) with angular stainless-steel elements worthy of the film, "Dr. Caligari's Cabinet." His guest rooms (right) exude a Miesian minimalism and luxuriousness, owing to the stainless-steel and Jatoba wood furnishings.

Commentary

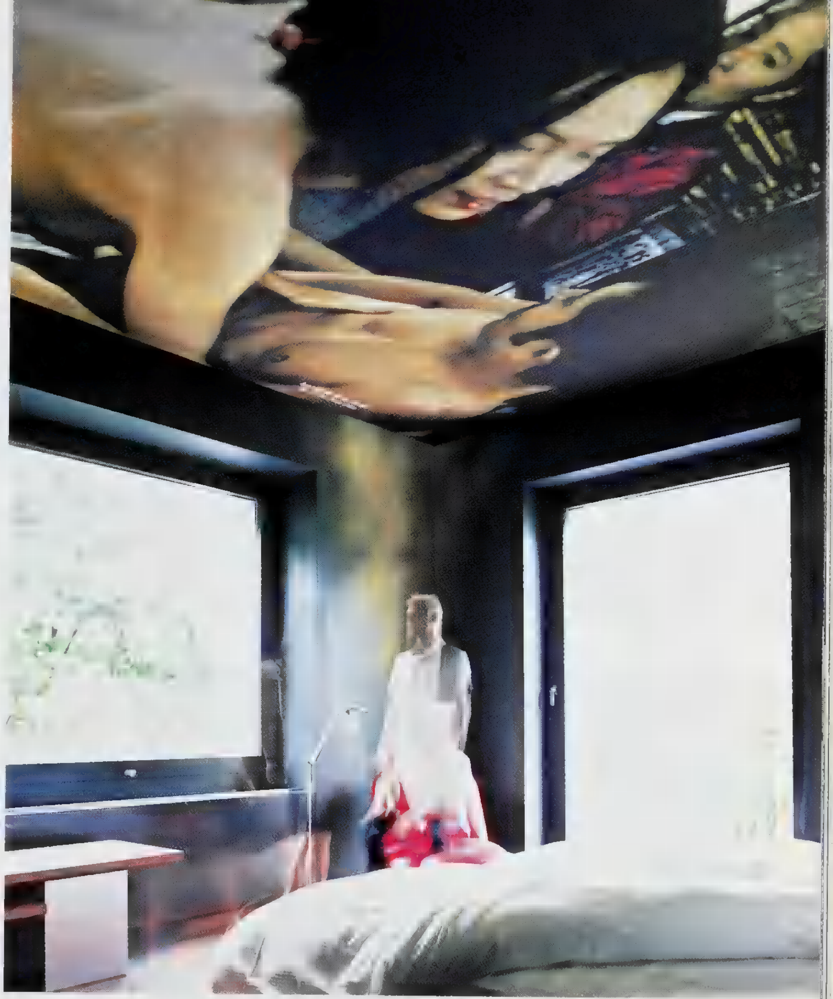
The small hotel is easily identifiable as you approach it by night, since the ceiling murals, uplighted by the sconces, turn it into a vibrantly colored cinematic lantern. Entering the lobby, you can appreciate—without being disoriented—the masterful spatial and visual effects that Nouvel creates through his sectional composition, framed views, refracted light effects, and reflective surfaces. The tiny elevator and plain, gray corridors purposely suspend the mood, giving little hint of what awaits behind the closed doors. Entering, you are virtually thrust into a dark commodious guest room (you might need a flashlight to find the buttons operating the lights and blinds) where calm, luxury, and voluptuousness rule. ■



TYPICAL FLOOR



1. *Lobby*
2. *Reception*
3. *Bar/Lounge*



The walls are painted atmospherically to look like blurred after-images of the film stills on the ceiling. The rooms have large plank floors and automatic blinds on double glazed windows—some of which pivot open to small balconies.

Mii amo Spa
Sedona, Arizona

2

GLUCKMAN MAYNER ARCHITECTS RECKONS WITH A SPECTACULAR NATURAL SETTING AND NAVIGATES THE NUANCES OF NEW AGE THERAPIES.

By James S. Russell, AIA

Architect: *Gluckman Mayner Architects—Dana Tang, Gregory Yang, project architects; Marwan Al-Sayed, Mark Fiedler, Carolyn Foug, Alex Hurst, Antonio Palladino, Nina Seirafi, Michael Sheridan, Julie Torres-Moskovitz, Dean Young, project team*
Client: *Sedona Resort Management*
Engineers: *Rudrow & Berry, Inc. (structural); Clark Engineers (SW, MEP); Shephard-Wesnitzer (civil)*
Consultants: *Ten Eyck Landscape Architects (landscape); Sylvia Sepielli (spa consultant); Water Technology (pool consultant)*
General contractor: *Linthicum Constructors*

Size: *24,000 square feet (spa building), 10,000 square feet (casitas)*
Cost: *$7.2 million (total construction)*

Sources
Masonry: *Mexican fired adobe brick*
EIFS: *Sto Corp.*
Venetian-style plaster: *ARD, Lime Rasato plaster*
Elastomeric (TPO) roofing: *Carlisle Syntec Systems*
Aluminum windows and doors: *Western Insulated Glass; Brite-Vue*
Skylights: *Therm-O-Weld system; Velux-America*

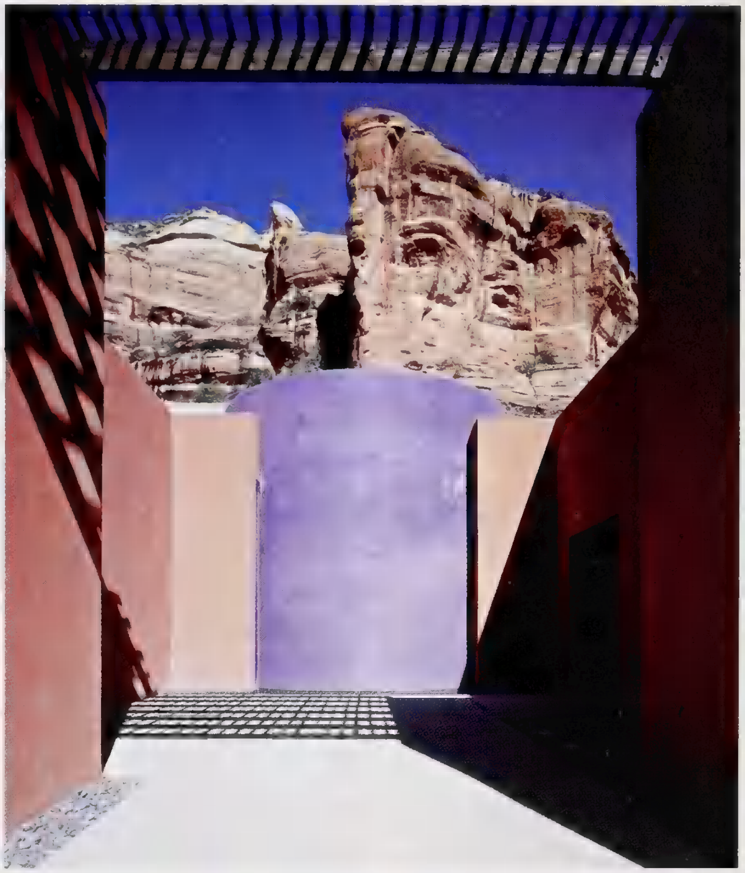
www
For additional hotels and more information on the people and products involved in this project, go to Building Types Study at **www.architecturalrecord.com**

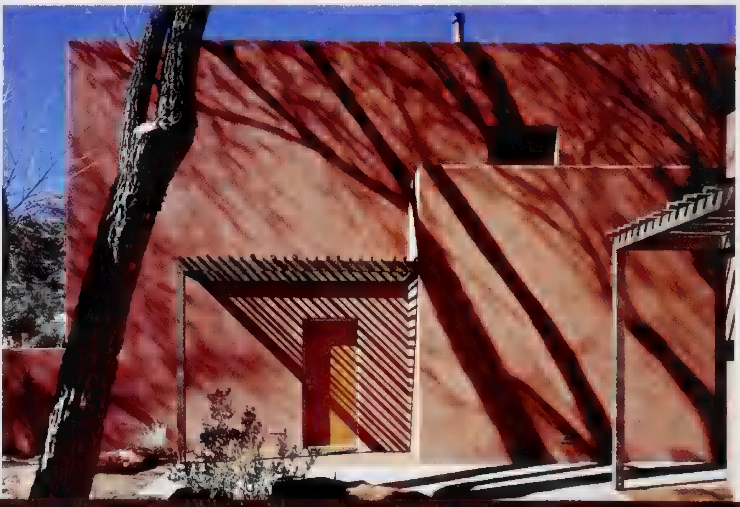
The situation

Just about any holistic, mind/body treatment you can name is available in Sedona, Ariz. The therapeutic energy emitted by its red-rock gorgeousness is said to have been recognized by Native Americans. You can see a myropractor (as the Los Angeles Rams do), commune with crystals, or be treated Ayurvedically. Beyond the town's faux Santa Fe-style shopping strips lies Boynton Canyon, an intimate, small-scale recapitulation of the area's craggy splendor. Rock formations tower over a scrub-shrouded resort called Enchantment. Striated in a rainbow of reds and earth tones and carved into jagged ravines, looming promontories, and needlelike towers, the rocks present a preternaturally still snapshot of millions of years of primordial geological violence.

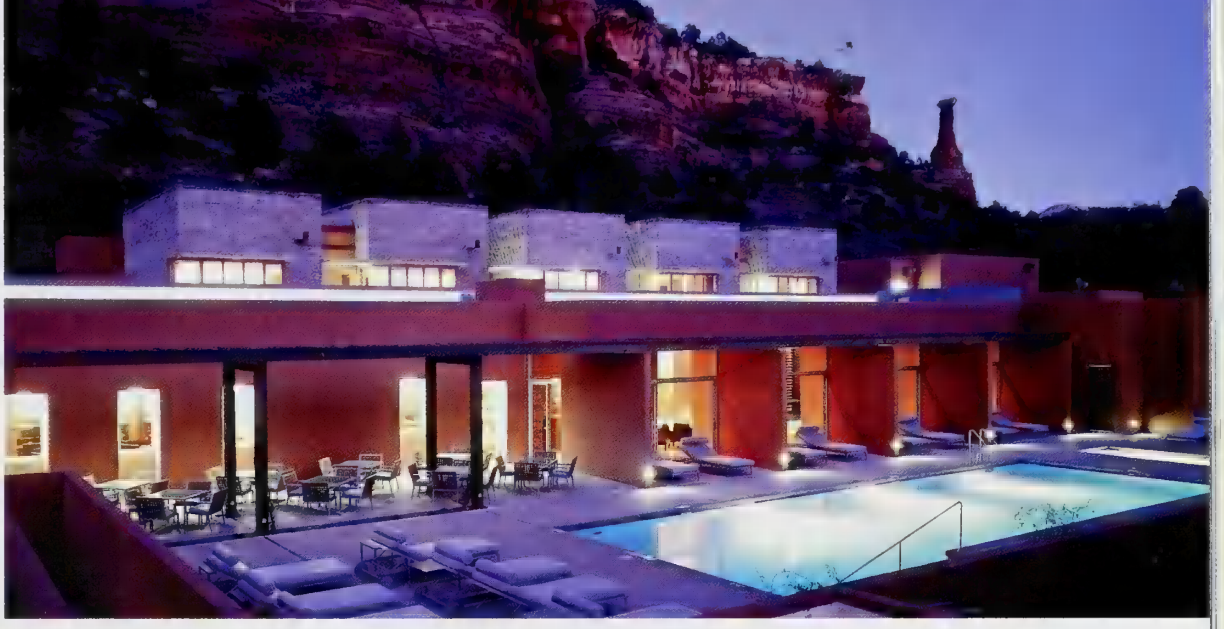
Sedona Resort Management, which owns and operates the resort, wanted to recognize the unique beauty of the landscape and at the same time tap into the healing capacity of the place by adding the deluxe mind/body Mii amo Spa. So they hired Gluckman Mayner, a firm known for museums and galleries in urban settings.

Huh? "We wanted architecture that was simple and sensuous," explained George Lidicker, the company president. "With Gluckman Mayner, we were impressed by the retail connection [the firm has designed stores for Helmut Lang





PHOTOGRAPHY: © HARRY ZERNIKE



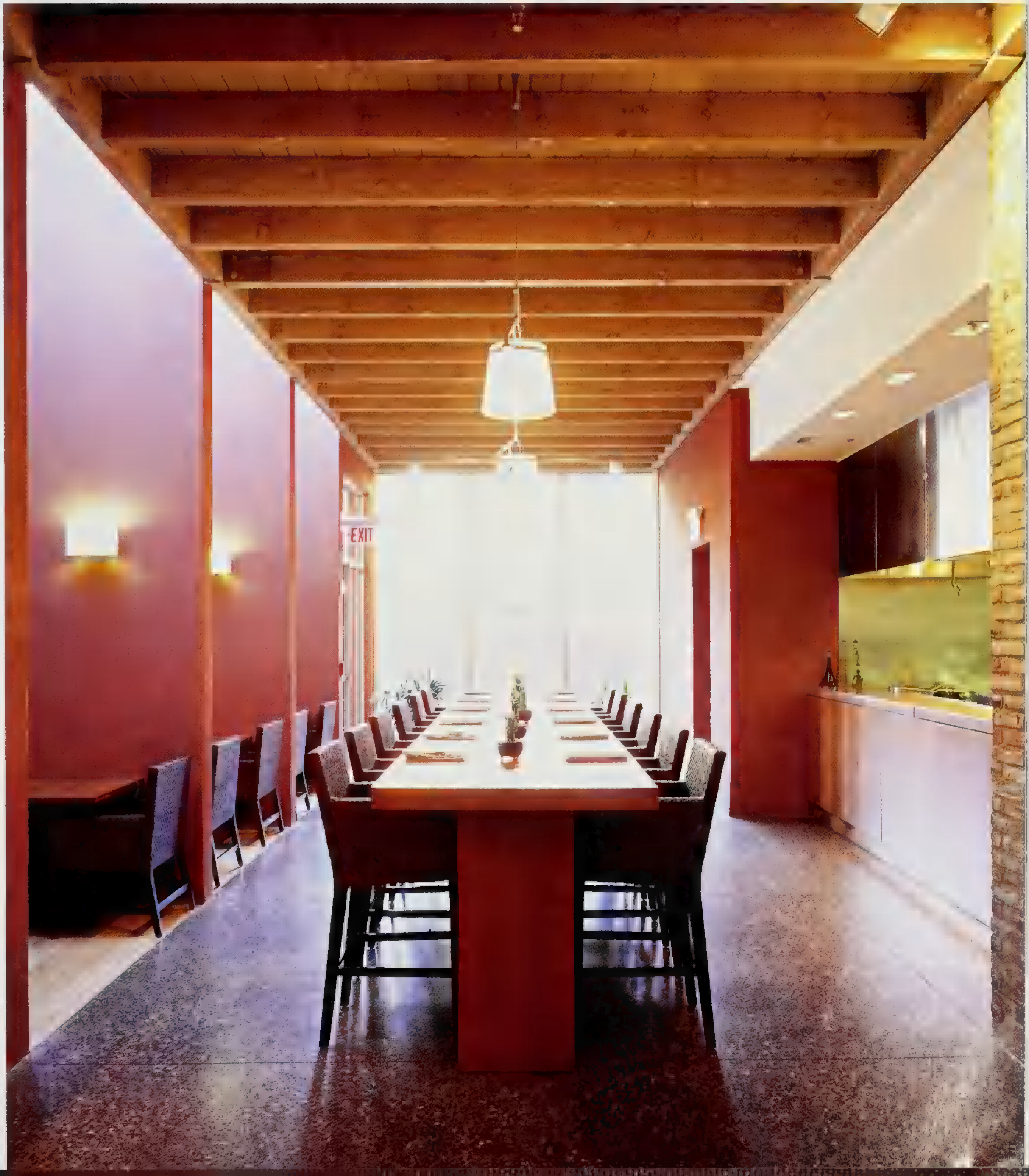
Adobe-brick towers containing two-level treatment areas project above the roof (right). Quiet evocations of regional traditions are evident in the casitas (opposite, bottom) and the cafe (below). The drumlike crystal grotto greets clients at the entrance (opposite top).

and others] and the museum orientation—especially the sensitive treatment of light."

Lidicker envisioned a facility catering to a sophisticated clientele seeking both pampering and healing. It would perfectly fit the locality's holistic, therapeutic orientation while also widening the appeal of a resort built for tennis in the early 1980s that had failed to live up to the potential of its unique setting. Within its 24,000 square feet the spa needed treatment rooms to house a wide range of therapies. The program included both indoor and outdoor pools, as well as an exercise room, yoga room, library, cafe, demonstration kitchen, and outdoor area for tai chi and stretching, while accommodating customized programs ranging from weight loss to drug-and-alcohol detoxification (a three-day package can range from $1,890 to $2,790).

The solution

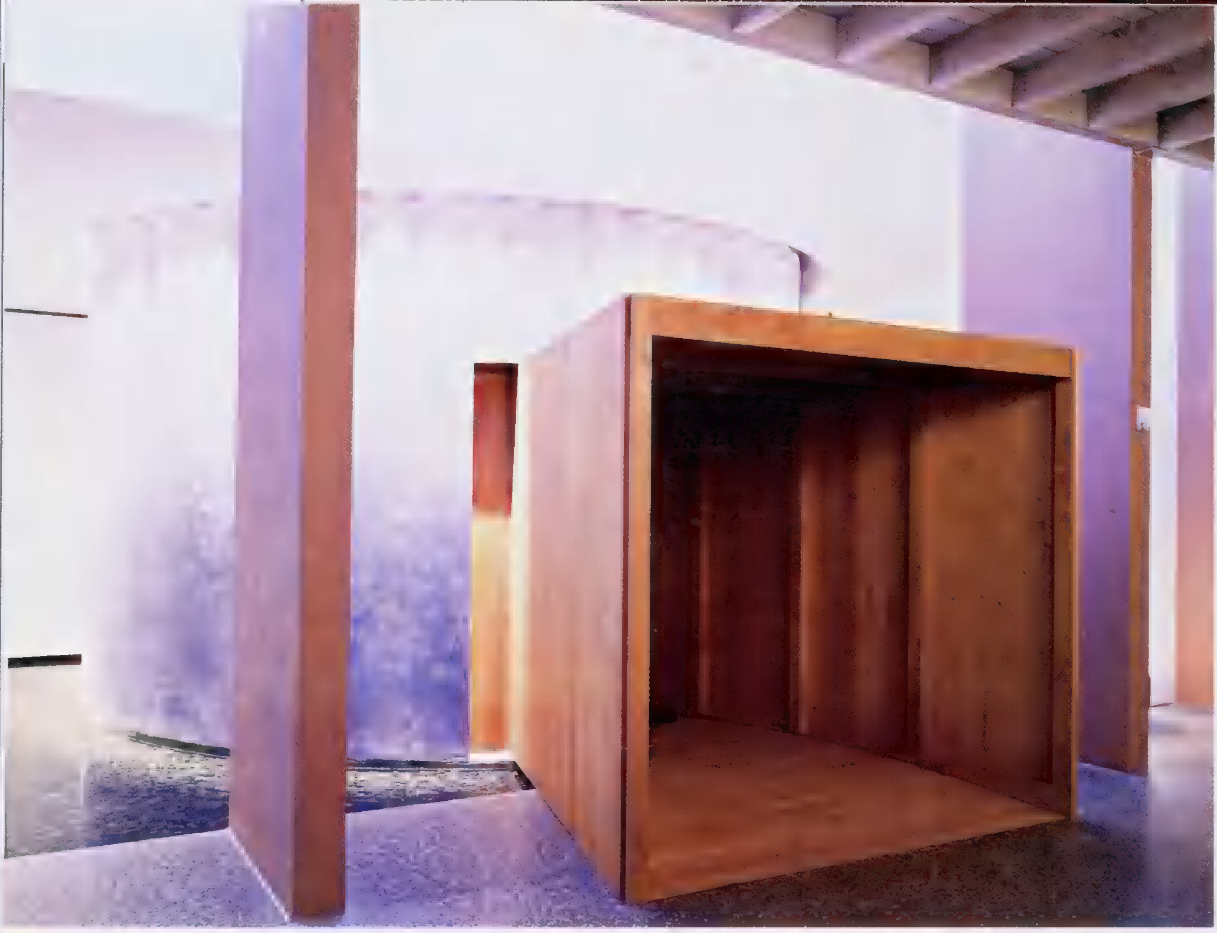
Perched atop a tall ladder, arranged to simulate the position of various rooms, Dana Tang, of Gluckman's office, took photo after photo to be sure spaces within the building focused on key elements of the landscape, such as the Kachina Woman, a dramatic eroded-rock needle (top right). "We were anxious to push further than they may have expected," commented principal Richard Gluckman, FAIA. The firm



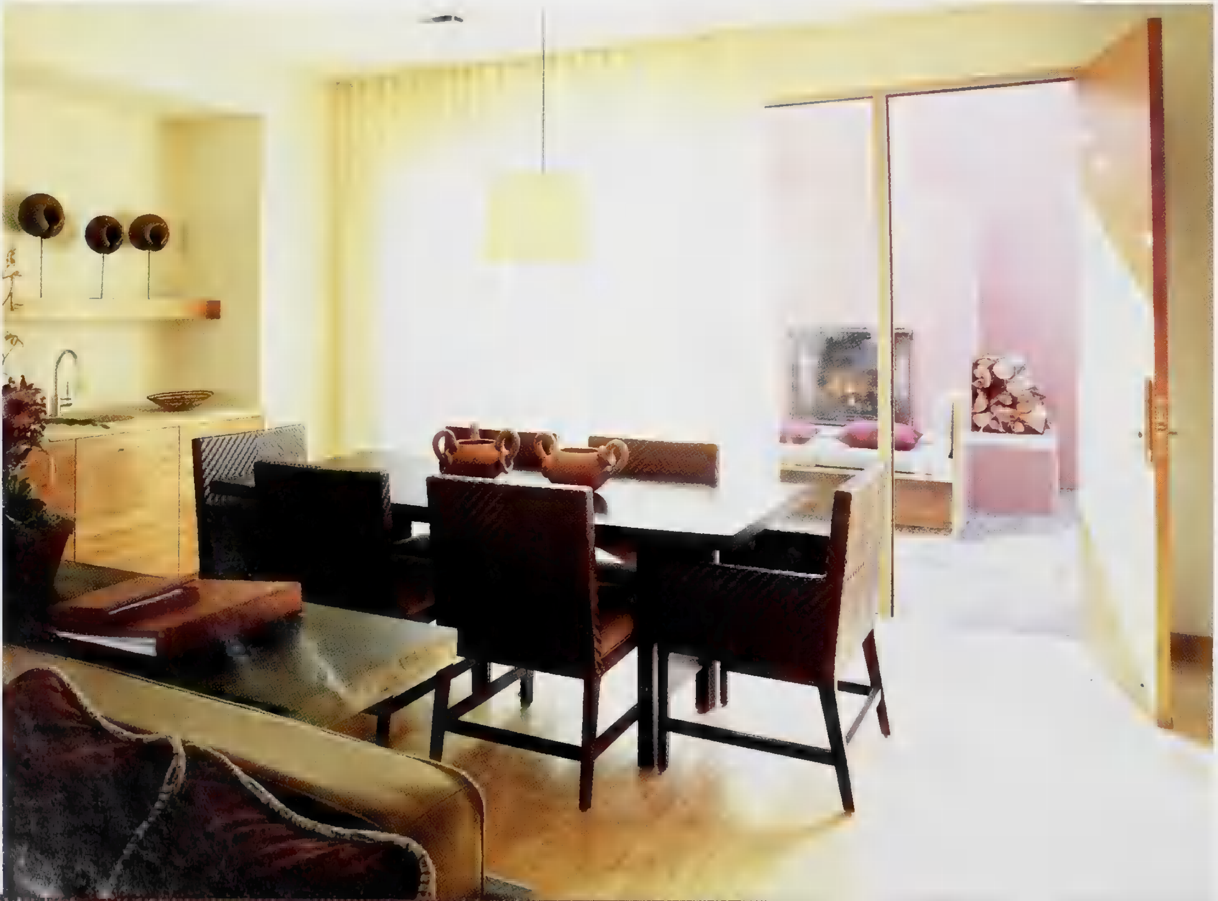
calculated sun angles and tapped Sedona's rich trove of New Age therapists to advise on auspicious arrangements, particularly of the drum-shaped Crystal Grotto, an earth-floored, templelike central space containing a backlighted petrified log and small fountain, and quartz crystals aligned to cardinal points. Recognizing the spiritual nature of the place while avoiding what Lidicker called "the spaceship-taking-people-away aspect" made finalizing a design take much longer than anticipated. But the deliberative process created precisely the facility he sought. Open only three months, occupancy already exceeds expectations, he said.

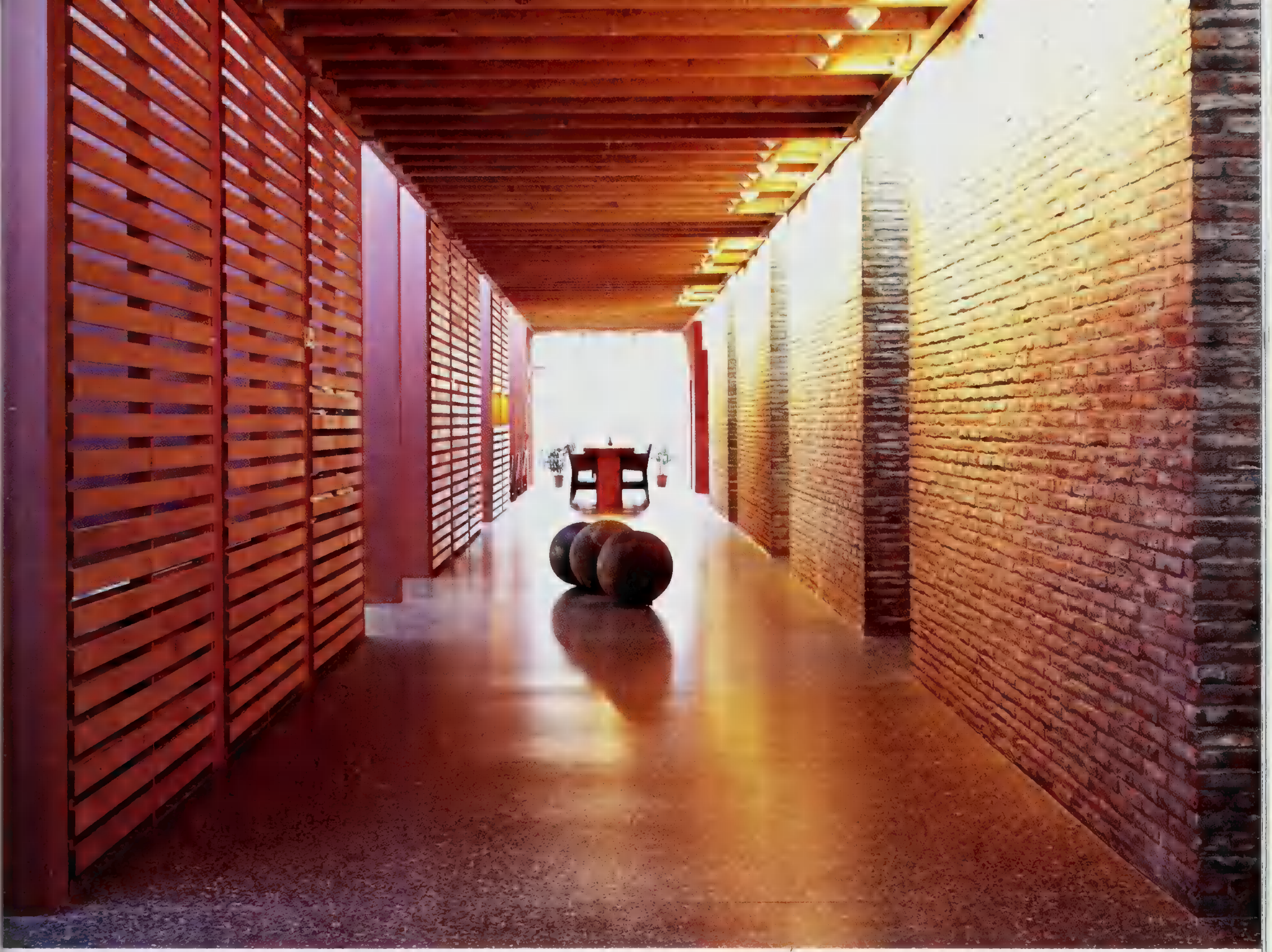
The complexities of site and program might have resulted in a sprawling, informal layout. The architect instead created an exceptionally disciplined plan, responding to both a small site and the firm's own design proclivities. From a central north-south corridor that stretches the entire length of the structure, treatment clients enter a dressing area with lockers, sauna, steam room, and whirlpool. They ascend within adobe-brick-clad towers to the upper level, where they are greeted by their assigned therapists, who conduct them to one of 16 treatment rooms. The simplicity of this organization, which disguises the numerous ancillary preparation spaces, is appreciated by clients who are not made uncomfortable wandering down winding corridors wearing only a robe. Skylights open onto the cliffs looming above. The pool deck opens to a Cinemascope-sized canyon panorama.

Clients come to this "destination" spa for three- to seven-day experiences and stay in one of 16 casitas—handsomely appointed rooms opening to a shared patio or to intimate courts or decks. Elegantly striated stone countertops quietly echo the geologic drama outside. Sunlight dapples deep tile-clad tubs, and, diffused by the enclosing walls of the outdoor spaces, spreads evenly over wood cabinetry and woven, striped carpet runners.



High-walled outdoor courtyards offer privacy and diffuse the powerful local light within the bamboo-floored casitas (below). A wood-floored bridge leads to the cylindrical crystal grotto—the earth-floored spiritual center of the spa—anchored in its own pebble-lined pool (above).



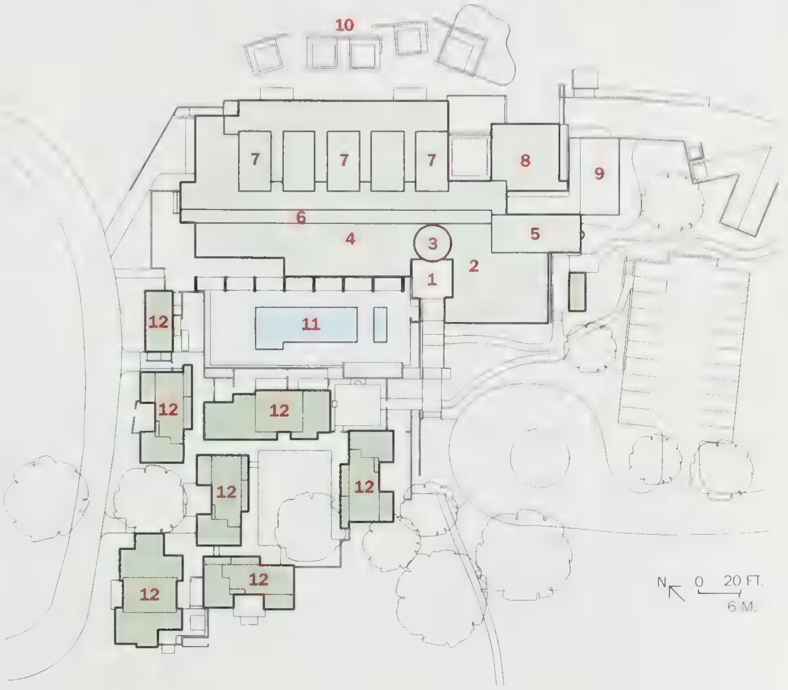


Commentary

The biggest surprise here is the spa's introverted nature—it is organized for contemplation, not exclamation. The rigid rectilinearity of the plan evokes the modular rigor of a Japanese temple. And, as in such temples, the careful framing of views enhances the appreciation of the setting. The architecture is so soft-spoken that it's easy to overlook the calibrated evocations (never quotations) of regional precedents in touches like the tint of the stucco cladding (over concrete block) or the vigalike wood-ceiling framing, and the contemplative cool of the polished-concrete terrazzo. The monastic calm is perfect for those seeking to keep a clamorous, demanding world at bay. ■

A corridor runs the entire length of the spa, dividing the treatment areas (in the adobe-brick-clad towers) from the cafe, lounge, and pool areas.

1. *Entrance court*
2. *Reception*
3. *Crystal grotto*
4. *Cafe/lounge/indoor pool*
5. *Library*
6. *Corridor*
7. *Treatment*
8. *Fitness/yoga*
9. *Tai chi lawn*
10. *Outdoor treatment*
11. *Outdoor pool*
12. *Casita*



Royal Hotel
Miami Beach, Florida

3

JORDAN MOZER BRINGS A FRESH SPIRIT TO AN OLD HOTEL WITH MULTIPURPOSE FURNITURE THAT WORKS AS ARCHITECTURE.

By Clifford A. Pearson

Project: *Royal Hotel, Miami Beach, Florida*
Owner: *Norman D. Bay Corporation*
Hotel designer: *Jordan Mozer and Associates—Jordan Mozer, principal; Jeff Carloss, senior architect; Bill Ewert, project architect; Beverlee Mozer, business manager; Andy Susanto, project industrial designer; Mike Brandys, digital graphic designer*
General contractor: *JPBC*

Size: *16,100 square feet; 42 rooms*
Cost: *$107,000 (construction, furniture, finishes)*
Opening date: *Late 2000*

Sources
Bed and chaise: *Jordan Mozer and Associates (design and manufacturing)*
Carpet: *Jordan Mozer and Associates (design and manufacturing)*
Cast-aluminum hardware: *Jordan Mozer and Associates (design and manufacturing)*
Room number sconces and pendant lights: *Jordan Mozer and Associates (design and manufacturing)*

WWW
For additional hotels and more information on the people and products involved in this project, go to Building Types Study at **www.architecturalrecord.com**

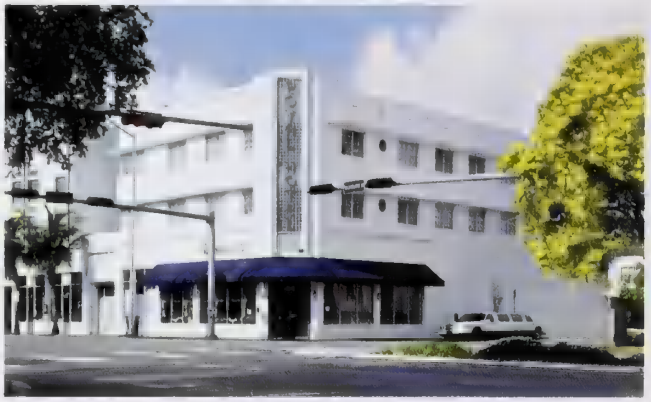
The situation

There's South Beach-on-the-Water where you can spend $500 a night to stay at Philippe Starck's Delano or David Chipperfield's Shore Club. And there's South Beach-on-the-Cheap where you can hop from club to club, then crash at one of the small, late-Moderne hotels a few blocks from the ocean. Set on Washington Avenue, the throbbing heart of South Beach's club zone, the newly renovated Royal Hotel pulls in style-conscious 20- and 30-somethings at an affordable $130 a night. With just four months for design and construction and only $107,000 for construction and furnishings, Chicago designer Jordan Mozer transformed the hotel's 42 rooms. Work continues on restoring the concrete building's landmarked exterior to its original 1938 glory and extending the lobby with a new bar and lounge that Mozer has designed as a breezy social hub.

The solution

"We flew down to Miami and took the temperature of South Beach," says Mozer, who trained as an architect and is best known for eye-popping restaurants. "The idea was to do something modern but fresh. It's all about the sun and the drinks."

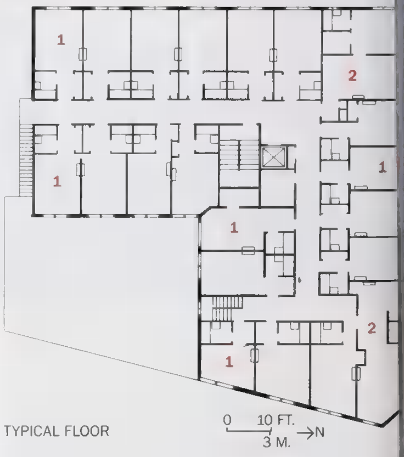
Using just paint, carpeting, and new lights, Mozer turned the hotel's narrow hallways into color-saturated experiences with key-lime, purple-blue, and marigold setting the tone. But as soon as guests open the doors to their rooms, they get something completely different: white marble floors, mostly white walls, and white furniture. "It's like jumping into the surf," notes Mozer. Color seeps into the room by way of bleached-lime or bleached-blue paint on one wall and a strip of carpeting on the floor. The showstoppers, though, are the two pieces of furniture that dominate the room: the bed's biomorphic headboard with built-in bar and nightstand and an equally curvaceous chaise, or "digital throne," sprouting surfaces for a computer monitor and keyboard. "We wanted to make the bed an island where guests could hang out and entertain," says Mozer.



PHOTOGRAPHY: © DOUG

Materials

The bed headboard and chaise are made of a woven glass-reinforced resin that is molded, sanded, then coated with a fire-resistant finish. Mozer worked with a structural engineer in designing the furniture so the pieces can accommodate guests who happen to stand on the bar while mixing drinks or mistake the nightstand for a chair. As he does with most projects, Mozer designed and built all of the custom furnishings in his Chicago studio.

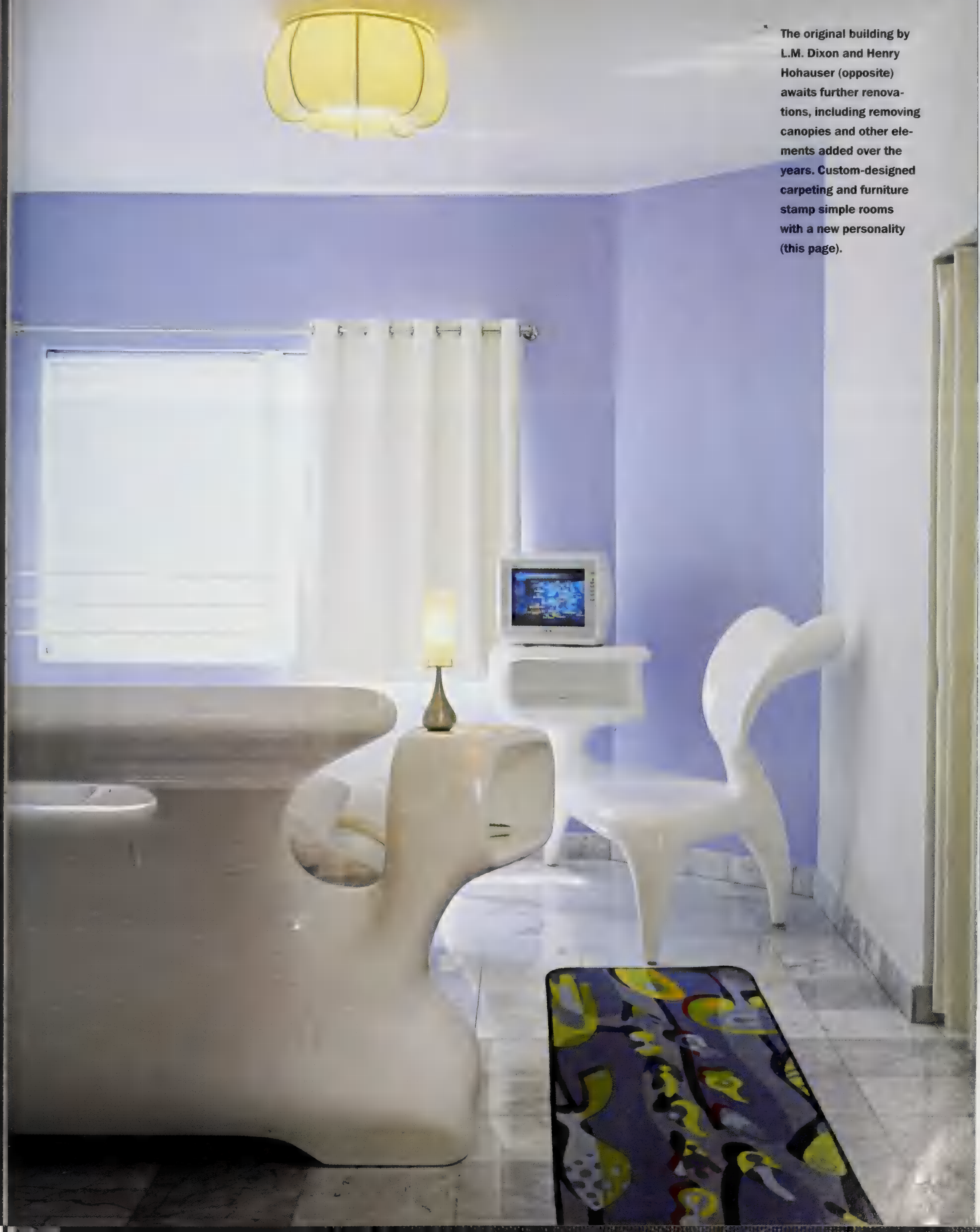


TYPICAL FLOOR

1. *Guest room*
2. *Suite*

Commentary

For a hotel where the 210- to-230-square-foot bedrooms aren't much bigger than the beds, Mozer wisely makes his furniture the star—piling multiple functions into each piece. Though animated in form, the design isn't cartoony. And the digital throne turns out to be surprisingly comfy—even as you kick back one last nightcap and pick up your E-mail. ■



The original building by L.M. Dixon and Henry Hohauser (opposite) awaits further renovations, including removing canopies and other elements added over the years. Custom-designed carpeting and furniture stamp simple rooms with a new personality (this page).

Hudson

New York City

4

PHILIPPE STARCK TURNS A BRICK BUILDING FROM THE TWENTIES INTO ANOTHER IAN SCHRAGER HOT SPOT WITH A LOOK HE DESCRIBES AS "NEW ENGLAND PREP SCHOOL ON ACID."

By Cynthia Davidson

Overall design: *Philippe Starck*
Interior design: *Philippe Starck/Ian Schrager Hotels Design Studio—Anda Andrei (president of design, ISH); Bruno Borrione and Daniel Pouzet (Starck design team); Suzanne Couture, Masako Fukuoka, Helka Puc, Kim Walker, Dan Stewart, Hilary Gilford, Jury Alvarez, Leila Fazel, Lara Jacobs, Kelly Behun (ISH design team)*
Production architect: *Polshek Partnership Architects—Tim Hartung, Kevin McClurkan, Tomas Rossant, Chris Andreacola, Stephen Chu, Ranier Simoneaux, Janny Kim*
Client: *Ian Schrager Hotels–Ian Schrager, chairman and CEO; Michael Overington, president of development; Eric Bass, project manager*
Engineers: *Ambrosino, De Pinto & Schmeider (mechanical and electrical); Robert Silman Associates (structural)*
Consultants: *Johnson Schwinghammer (lighting); Madison Cox (landscape); Clair Brothers (audiovisual); Bovis Lend Lease (general contractor)*

Size: *475,000 square feet*
Cost: *$125 million*
Completion date: *Fall 2000*

WWW

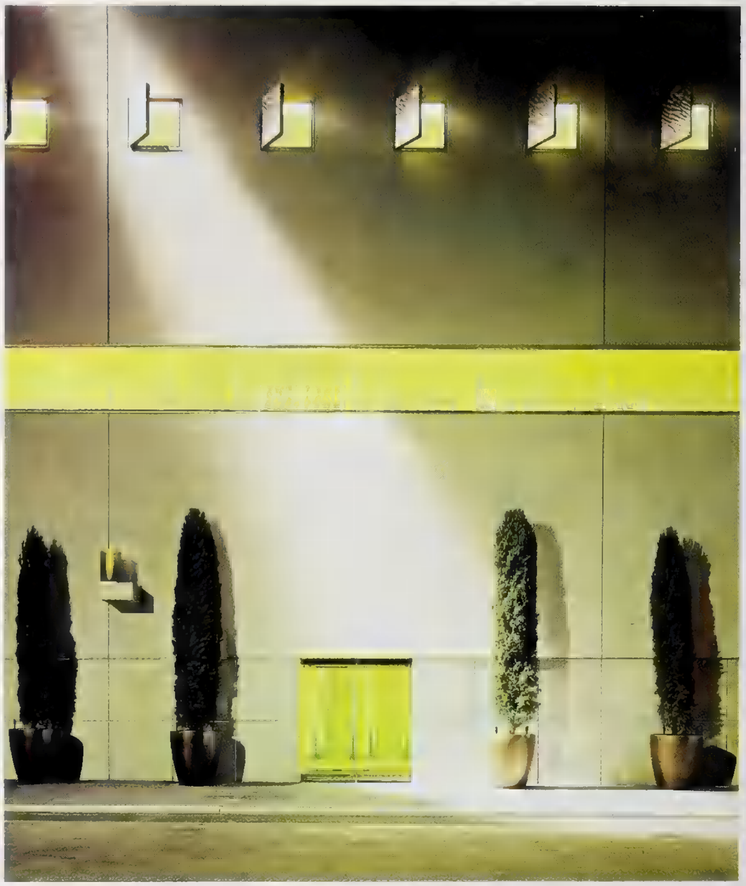
For additional hotels and more information on the people and products involved in this project, go to Building Types Study at **www.architecturalrecord.com**

The situation

It's called, simply, Hudson, and its exterior on West 57th Street in Manhattan is equally understated: a pale, stuccoed wall, fronted by eight potted cedars that stand like columns at the unmarked, glazed entry, from which a soft chartreuse glow is the only promise of something within. This is the confidence of hotelier Ian Schrager, whose one-of-a-kind hotels never shout their names. Instead, word of mouth, a very good publicity agent, and unique style make each Schrager hotel a destination for travelers and local residents alike. In his first New York City hotel in more than 10 years, Schrager decided to create a "hotel as lifestyle" for the young crowd and the young at heart, where the room rate can be as low as $95 a night (a standard room goes for more like $245).

The solution

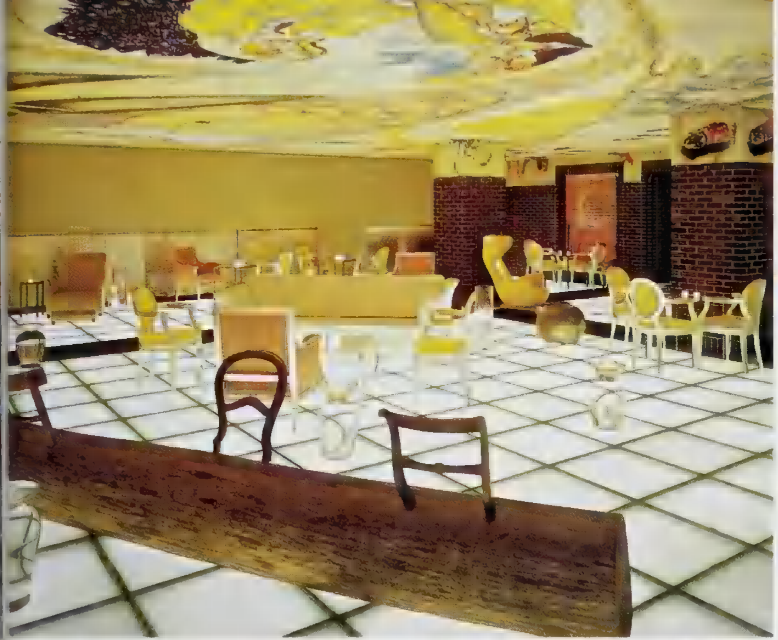
"We're not winging it," Schrager said. "We're investing too much money"—$125 million for Hudson. As he has successfully done before, Schrager turned to French architect Philippe Starck, whose "common sense and sense of humor" permeate his work. Transforming the former American Women's Association clubhouse and residence, built in 1928, into a hotel required completely gutting the public areas, which had been made into a warren of spaces by various tenants over the years. Design decisions, said Anda Andrei, Schrager's longtime president of design, had to be based on the final room prices.

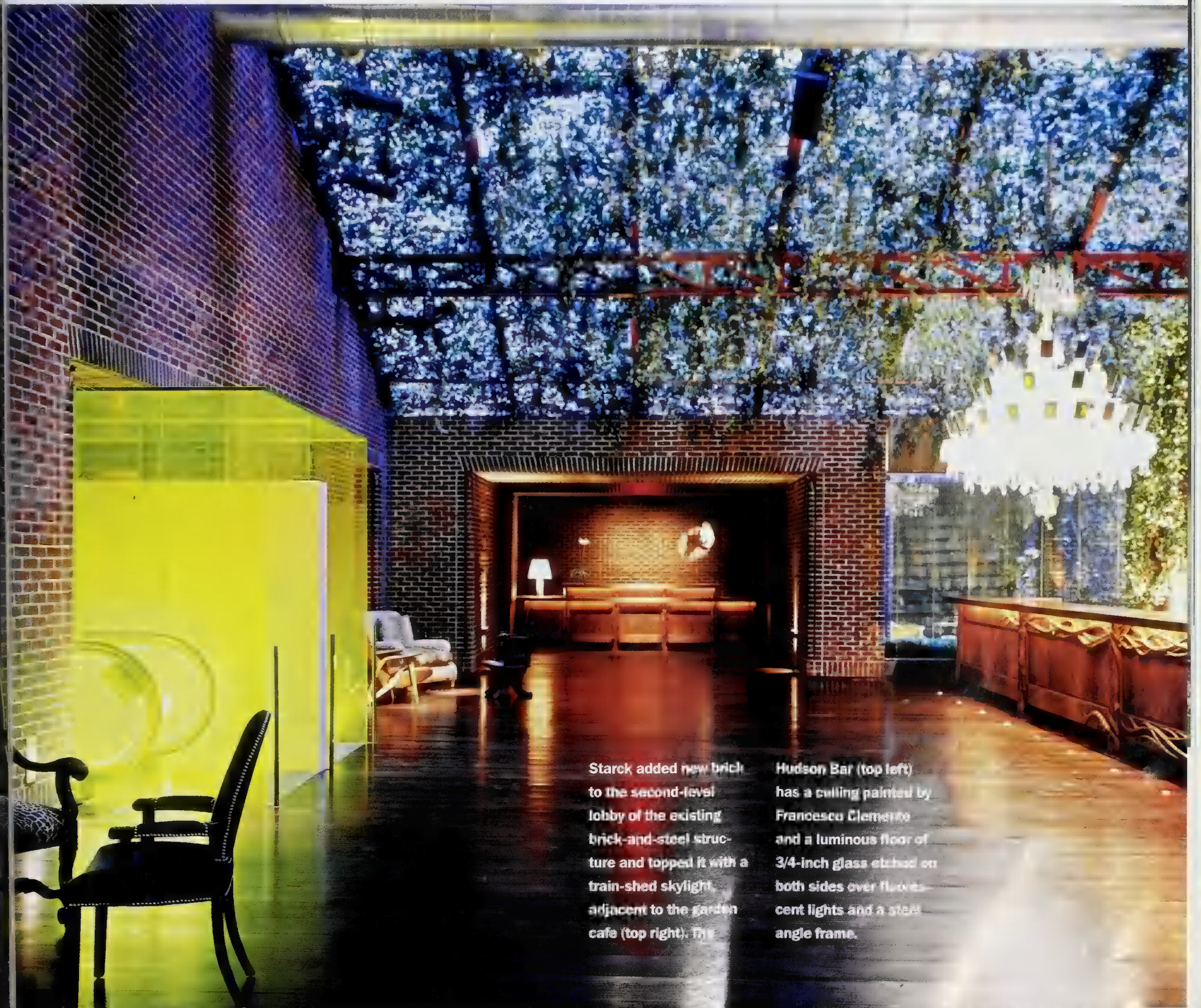


To compensate for the tiny guest rooms (140 square feet for a single bed; 150 square feet for a queen-size one) whose dimensions were established by the original women's residence plan, the designers created large public spaces where guests can stretch out and relax. An old college cafeteria, with seating at large communal tables, and a library bar, with a pool table, computer plug-in stations, and even books, provide opportunities both to be seen and to meet people—a Schrager trademark. The spacious lobby bar is conceptually upside down, with a Francesco

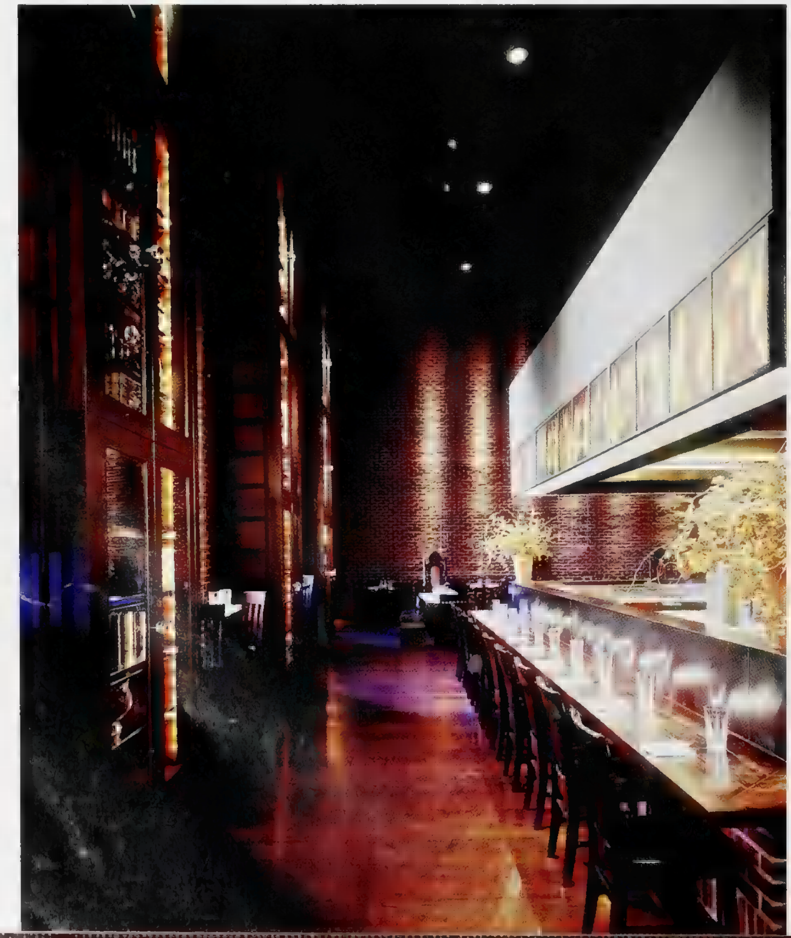
Cynthia Davidson, the former editor of ANY *magazine, writes frequently on architecture.*

PHOTOGRAPHY: © MICHAEL MUNDY





Starck added new brick to the second-level lobby of the existing brick-and-steel structure and topped it with a train-shed skylight, adjacent to the garden cafe (top right). The Hudson Bar (top left) has a ceiling painted by Francesco Clemente and a luminous floor of 3/4-inch glass etched on both sides over fluorescent lights and a steel angle frame.



The guest rooms of the 1,000-room Hudson are paneled in plain quartered makore wood (above); the Hudson Cafeteria (left), an open-kitchen-style restaurant, has refectory tables.

Clemente mural on the ceiling that suggests carpet and a light grid on the floor that suggests an office ceiling. The whimsy, including Starck's solid acrylic urns that serve as tables or stools, conjures a playful, free spirit. Casual placement of eclectic inherited furniture—mismatched Starck, Droog, Versace, flea-market finds, and other pieces—suggests an informal, found elegance throughout the public spaces and the garden planted in the courtyard of the U-shaped building.

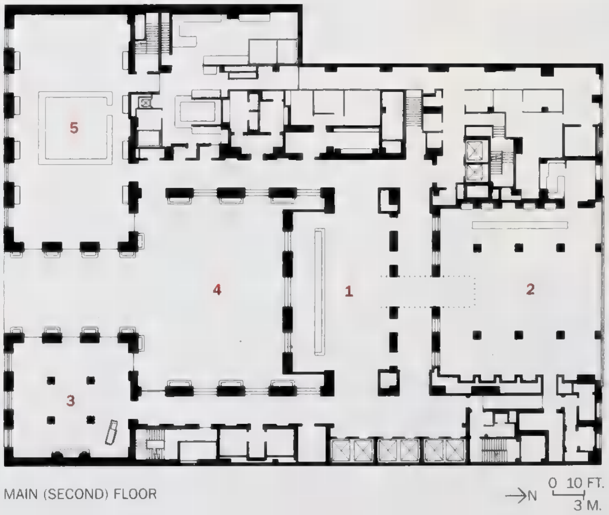
Upstairs, 21 floors of dimly lighted corridors painted dark gray lead to the guest rooms, which, though resembling ship cabins, are cheerfully lighted oases, rosy with cherry-stained makore-wood-paneled walls and jatoba-wood floors. With just enough room for a queen-size bed and two small bedside tables (with an urn stool tucked underneath), the standard rooms are highly efficient. Televisions and sound systems are stowed in built-in cupboards, and ashtray-like fixtures affixed to one wall provide a catchall for keys, loose change, and other pocket-fillers. The proportionately small bathrooms are done in nurse's white, and the wall between the tub and bedroom opens up with a curtained interior window that lets light into the bath and simultaneously seems to expand the space of the bedroom.

The crowning elements of the small rooms are twofold: A sheer white drape, like a piece of protective gauze, separates the entry from the room; and bedside lamps feature Clemente paintings of sweetly odd faces, giving each room a unique version of the requisite hotel art without touching the walls.

Commentary

Just inside Hudson's street lobby, the warm bath of chartreuse light gives the hotel instantly cool karma. Two white cocoon forms interrupt the rectangular space, from which guests step onto an escalator that glides up a yellow trough of light to the lobby. The massive reception desk is carved with tree trunks and branches that seem to support the bower of ivy covering the glass roof overhead. This enchanted forest is a childhood fantasy, where cocoons and treetops suggest everything sweet about being young. The tidy rooms, already compared to ship staterooms, can also be seen as a children's place—either neat, cozy nurseries or rooms in the attic, as Andrei called them. The layers and layers of decorative detail amuse the eye and cleverly conceal what is still basically a mundane brick dormitory building. But in offering a lifestyle for the young who don't want to face growing old, Schrager and Starck have struck a lucrative chord. ■

1. *Entrance lobby*
2. *Bar*
3. *Library bar*
4. *Courtyard cafe*
5. *Cafeteria*



MAIN (SECOND) FLOOR

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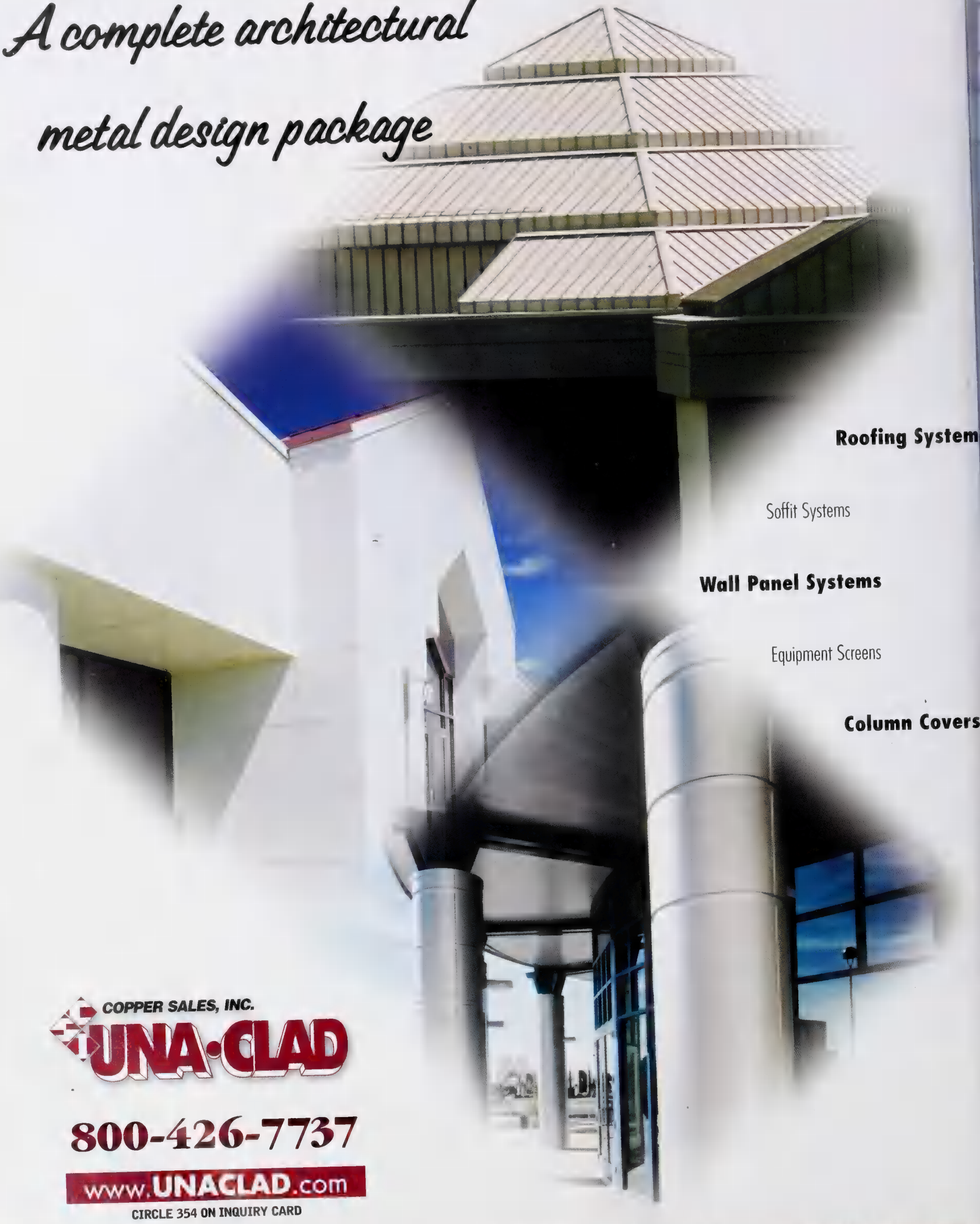

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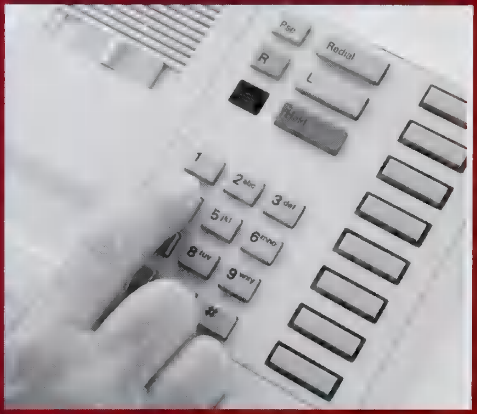

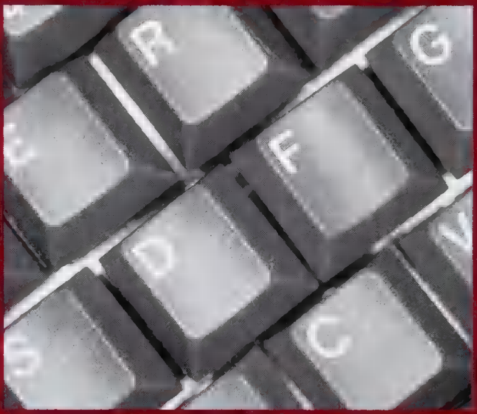

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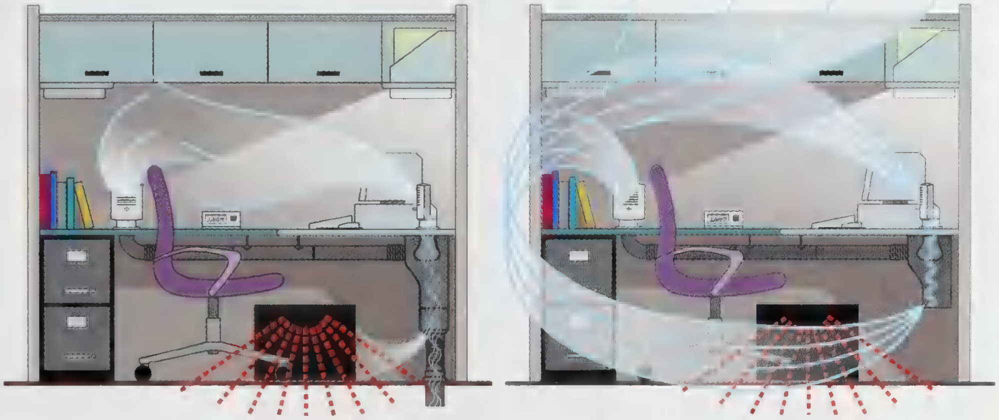
Here's the Dirt on Green Housekeeping

TO ENSURE THAT THE INDOOR ENVIRONMENT REMAINS HEALTHY OVER A BUILDING'S LIFE CYCLE, ARCHITECTS SHOULD CONSIDER MAINTENANCE PROCEDURES AND INCORPORATE MONITORING SYSTEMS.

By Nancy B. Solomon, AIA

Most architects enter the profession because they are enamored with design and fascinated by materials, technology, and systems. Nevertheless, the issues involved in making healthy buildings can be equally compelling, especially if you consider the benefits of proper pollution prevention, cleaning, and maintenance on the ongoing health of a building and its occupants and, ultimately, on the financial health of the client. According to International Performance Measurement & Verification Protocol, published by the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy in October 2000, analyses of existing scientific literature and calculations based on statistical data indicate that improvements in indoor environmental quality could potentially yield cost savings and productivity gains of $30 billion to $170 billion nationwide. And basic housekeeping plays a critical role in this endeavor.



Johnson Controls' Personal Environments system allows employees to control their own HVAC. These modules can be connected to an underfloor air supply (left) or can recirculate room air (right).

ILLUSTRATION: © JOHNSON CONTROLS, INC.

In the past few decades, the profession has heard a lot about indoor air quality and sick building syndrome (the puzzling condition in which a majority of occupants experience a variety of health or comfort problems linked to time spent in a particular building, but for which no specific illness or cause has been identified). And we have learned about the many ways to design a healthy building, from minimizing materials that release volatile organic compounds (VOCs) to providing adequate ventilation and lighting. But how does the architect ensure that a building that was designed to be healthy will stay that way once it is occupied?

"It's a real-world problem," admits Ben Kishimoto, AIA, of Kishimoto/Gordon Architects in McLean, Va. What good is careful design if, within months, occupants are tracking in lead-contaminated soils, cleaning crews are mopping floors with VOC-emitting products, and the maintenance workers can't access the drain pans to see if mold is growing in the mechanical system?

The nitty gritty

One man who has studied housekeeping issues closely is Stephen P. Ashkin of Healthy Housekeeping in Bloomington, Ind. Ashkin consults with architects and organizations on how to design buildings that can be cleaned efficiently and safely.

"It's well documented by the EPA that cleaning and maintenance affect the health of the building and its occupants," says Ashkin. In recent years, the government agency has produced a number of resources, including *Building Air Quality: A Guide for Building Owners and Facility Managers* and *IAQ Tools for Schools Kit,* to address these issues.

With regard to general housekeeping in a new building, people can get sick from exposure to particulates or biological contaminants that have not been adequately removed or to VOCs and other toxic components in the cleaning compounds themselves. "If we use pollution prevention strategies," explains Ashkin, "we can reduce people's exposure to harmful materials."

By implementing these techniques during the design of a building, the architect offers the client a double bonus. In addition to the likely gains in worker productivity, the building owner will realize very clear savings in annual cleaning costs. In a typical New York City office building, for example, the maintenance savings alone could amount to about $46,000 per 100,000 square feet, year after year.

Contributing editor Nancy B. Solomon, AIA, writes about computers, building technology, and practice topics of interest to the architectural community.

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/AIA Continuing Education article. To receive credit, turn to page 382 and follow the instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. *Describe ways to maintain healthy buildings.*
2. *Explain the importance of building commissioning.*
3. *Discuss the benefits of selecting materials according to their cleaning needs.*

WWW For this story and more continuing education, as well as links to sources, white papers, and products, go to ***www.architecturalrecord.com***

Entries, bathrooms, and janitors' closets

Not surprisingly, the first line of defense against dirt should occur at the front door. Ashkin estimates that 85 percent of the dirt entering a building comes in on people's shoes. This innocuous-looking soil often harbors animal dander, pesticides, lead, and other hazardous materials. For the high traffic anticipated at the National Air & Space Museum's Steven F. Udvar-Hazy Center at Dulles International Airport in Chantilly, Va., scheduled to open in 2003, the Washington, D.C., office of Hellmuth Obata Kassabaum (HOK) designed a return air vent below the floor grates. Located in the entry vestibule, this vent will pull as much dirt as possible off visitors' soles. Further north, the New York City firm Stein White Nelligan Architects selected open aluminum grating with strips of a brushlike material for the vestibule of the South Jamaica Branch Library in Queens, N.Y. Here, the mud and dirt drops into a pan below, equipped with a floor drain, which the janitor periodically hoses down.

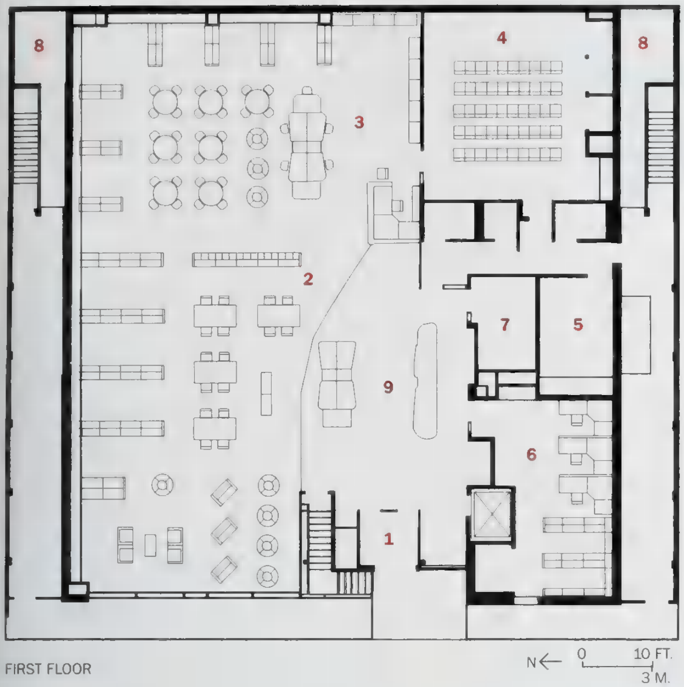
ASHKIN ESTIMATES THAT 85 PERCENT OF THE DIRT ENTERING A BUILDING COMES IN ON PEOPLE'S SHOES.

According to Ashkin, bathrooms are the number one source of complaints in a typical office building. They need to be well ventilated, equipped with floor drains, and accessible to hot and cold water spigots. Toilet partitions should be supported from above so that floors can be easily and thoroughly mopped. And grout should be minimized because it absorbs bacteria that is virtually impossible to remove. In addition, notes the cleaning maven, cleaning costs will drop if big, easily accessible trash cans are specified instead of the ubiquitous recessed ones that are too slender and must be unlocked with a key.

For a healthy building to stay healthy, janitorial closets also need to be given their due. Over the years, to maximize billable space, designers have downsized or eliminated these necessary support spaces. But, explains Ashkin, cleaning supplies must be readily accessible so that spills can be picked up right away, thereby minimizing the likelihood that stronger, more toxic chemicals will be required later on. And because potentially hazardous chemicals are often stored there, these closets should be constructed with full partitions, ventilated separately and placed under negative air pressure.

Mechanical systems

Critical to the design of any healthy building are the mechanical systems and the way they dovetail with natural ventilation. Most architects are



FIRST FLOOR

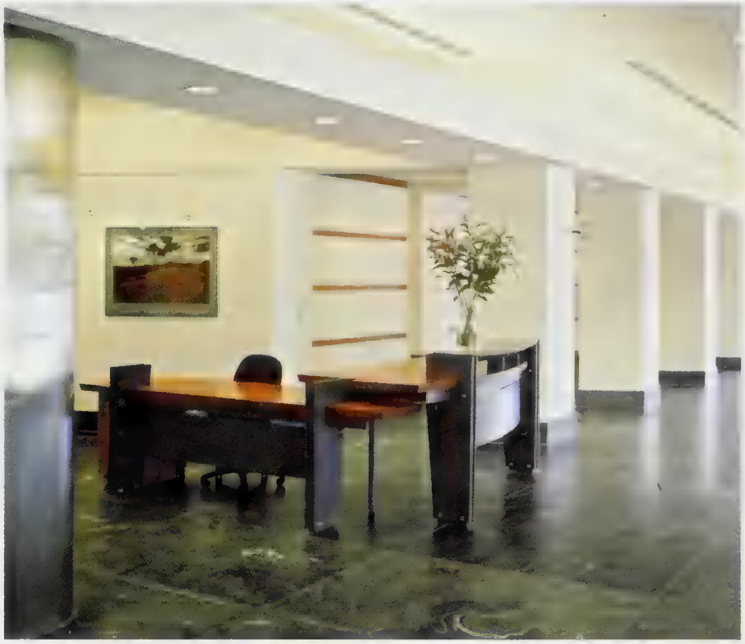
1. *Entrance*
2. *Adults' area*
3. *Children's area*
4. *Meeting room*
5. *Staff room*
6. *Work room*
7. *Office*
8. *Shed*
9. *Reception*

well aware of the importance of clustering and separately ventilating those rooms that contain machines, chemicals, or activities that emit unpleasant or potentially dangerous fumes. And certainly no architect would take lightly the selection of the actual equipment, the calculations for the number of air changes, and the host of other tasks required to ensure a well-operating HVAC system. But, to the frustration of many a facility manager, long-term maintenance requirements are often shortchanged to minimize construction costs. For example, explains Ward Komorowski, facility manager at Johnson Controls' Brengel Technology Center in Milwaukee, the mechanical room should be large enough so that the operation team can provide the proper maintenance and can check to see that the equipment is operating correctly. This seemingly obvious detail often gets lost in the push-and-pull that inevitably occurs between initial budget constraints and future cost efficiencies, explains Sandy Mendler, AIA, vice president and director of sustainable design at HOK in San Francisco and chair of AIA's Committee on the Environment.

Ductwork should be organized so that it is visually and consciously part of the circulation space, ensuring that it, too, can be easily and conveniently maintained. Says architect Randy Croxton, FAIA, of the Croxton Collaborative in Cannon, N.Y.: "One of the most egregious and

South Jamaica Branch Library Queens, N.Y.

This neighborhood library, which opened in December 1999, was the first project developed under the New York City Department of Design and Construction's nascent sustainable building program. Light monitors (above left) scoop up natural light, which then bounces off light shelves and curved diffusing reflectors to indirectly illuminate workstations in the public reading room (opposite) and circulation area. Stein White Nelligan Architects specified chemically stable finish materials, including brick and ground-faced block walls, which require virtually no care.



Nature Conservancy Headquarters Balston, Va.
Hellmuth, Obata + Kassabaum specified a spigot near the front door (top left) of this office building so the sidewalk could be hosed down regularly. The granite floor in the lobby (left) has a flame finish, which requires less polishing and buffing than a glossy one. Linoleum and cork abut the carpet in a reception area (above).

ubiquitous examples of lazy design is hiding the mechanical system wherever you want above an accessible ceiling." In this all too common scenario, maintenance crews end up climbing on computer workstations and lab benches—areas where dirt and debris are the worst form of contamination—to reach mechanical equipment.

Material selection

For a building to start out with good indoor-air quality, architects should specify materials with low or no VOCs. In addition, the designer should require that construction be scheduled so finishes that initially emit pollutants ("wet" finishes, such as paint and terrazzo) are applied and allowed to dry and air out before finishes that absorb emissions ("fuzzy" finishes, such as carpet and acoustical tile) are installed.

However, for a building to remain healthy over the long haul, the architect must also consider how well these materials can be maintained and refinished without harmful chemicals. Whenever possible, select materials that can be sealed, cleaned, and refinished with solutions that are water-based, rather than solvent-based. Vinyl composition flooring, for example, needs to be coated several times a year. Eventually, a chemical stripper is applied to remove the coating buildup, and then the cycle is repeated. "All of this releases pollutants," explains Carl Stein, FAIA, of Stein White Nelligan Architects. On the other hand, wood, cork, and bamboo flooring can be resurfaced every year or two with a water-based polyurethane finish, thereby lowering both emissions and labor costs throughout the life of the building, notes Mendler.

From a cleaning perspective, architects should minimize the different types of materials specified in a room because each material may require a different cleaning product or process. The more types of materials per room, the greater the cost of cleaning or the greater likelihood that the materials won't be cleaned properly. In addition, architects need to consider the different maintenance requirements of adjacent materials. For example, HOK specified cork and linoleum next to carpet for the Nature Conservancy's headquarters in Balston, Va., because cork and linoleum require a dry maintenance system or at most a damp mop, both

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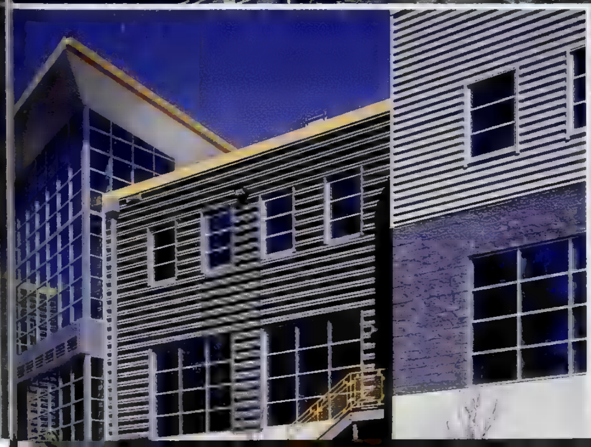

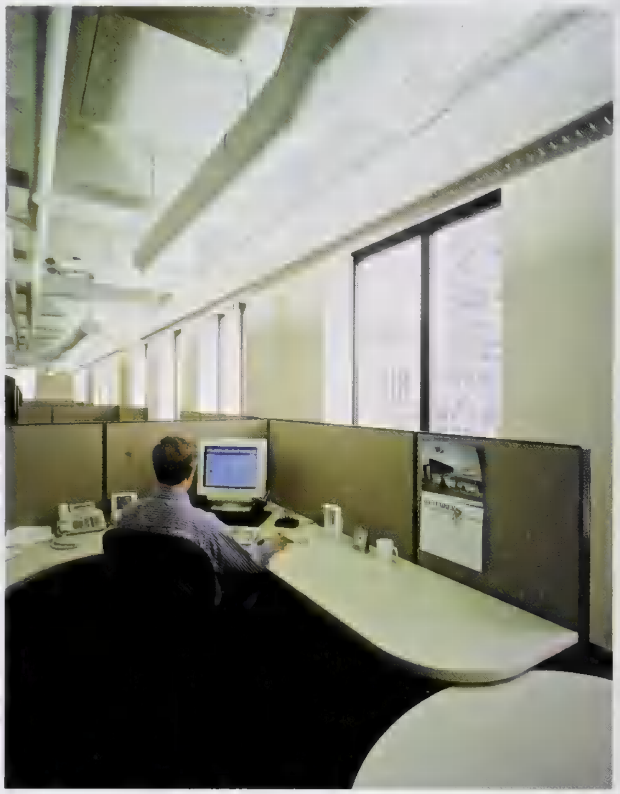

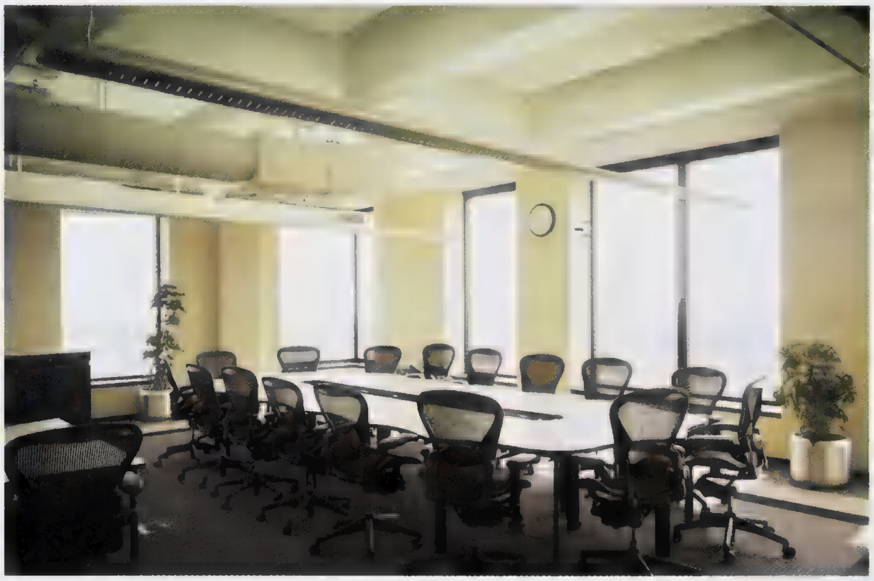

Johnson Controls Brengel Technology Center, Milwaukee
The Brengel Center (top left), which opened in March 2000, was one of the first buildings to receive a silver rating from the U.S. Green Building Council's LEED Green Building Rating System. From the beginning of the design process, the inhouse architect and facility manager worked closely with the architect of record, Zimmerman Design Group. Ample daylight and views of downtown Milwaukee and Lake Michigan enliven meeting areas (left). Mechanical equipment is located over circulation spaces so as not to disrupt workstations (above).

of which are compatible with the dry maintenance of carpet. Vinyl composition flooring, on the other hand, would require wet maintenance, which could create a messy and, therefore, potentially unhealthy condition at the carpet edge.

Testing and educating

A discussion of healthy building design is not complete without mention of building commissioning. Traditionally, commissioning referred to the testing and balancing of the mechanical system to ensure that it worked properly after installation and that the operations and maintenance crew understood its requirements. As the movement toward sustainable design has advanced, the term is frequently used to describe a broader mission. According to architect Ronald Gobbell, AIA, and engineer Steve Hays, of Gobbell Hays Partners in Nashville, the intent of a building commissioning plan is to "organize efforts to integrate design, construction, operation and maintenance, and also to provide guidelines for future managers and maintenance personnel." Ideally, all building systems should be commissioned—from mechanical and natural ventilation to lighting controls and exterior wall performance.

The educational portion of commissioning has many dimensions. At the basic level, the design team and building operators should be in communication early on regarding program goals and design vision. Operations and maintenance staff, for example, should participate in design meetings.

Maintenance and operation manuals should be provided to clients at project completion to serve as permanent records of the needs of various systems. Komorowski and other facility managers have come to expect a maintenance manual for the mechanical and electrical systems, but they would like to see a similar manual for the architectural finishes. "How do you clean them?" he asks. This is especially critical for the more innovative materials that are often specified by environmentally conscious architects.

The education and training process can take other forms as well. For the Philip Merrill Environmental Center, the Chesapeake Bay Foundation's headquarters in Bay Ridge, Md., the SmithGroup of Washington, D.C., specified a modified exit sign, with the words OPEN WINDOWS in red lettering against a white background, to be mounted on the wall eight feet above the floor in each of four open-office areas. When the HVAC system turns off, the words light up and the occupants, a

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proactive bunch working in an organization dedicated to environmental education, stop work and crank open the windows by hand to let in fresh air.

Making the transition

Ideally, a commissioning agent should be involved throughout the design process and should continue on for a year after the building is opened so that all systems can be tested and the operations and maintenance staff trained for all seasons. Unfortunately, few clients are yet willing to invest in this entire process, let alone in recommissioning five or ten years down the road to see if the systems are still running optimally and if the building remains healthy. Instead, Croxton often relies, at least in part, on a powerful building management system (BMS) that can process information from a large number of sensors scattered throughout the building. In essence, such a system performs its own ongoing recommissioning or reassessment: A BMS will alert the building operator to various anomalies, such as higher than expected VOC or carbon dioxide readings.

> **A BMS WILL ALERT THE BUILDING OPERATOR TO ANOMALIES, SUCH AS HIGHER VOC OR CARBON DIOXIDE READINGS.**

According to Croxton, the architecture profession has become accustomed to thinking in terms of handing over a piece of hardware to the client, but not the software that anticipates how the materials are going to be used, cleaned, and maintained, nor how the building will evolve over time. Continues Croxton, "Architects need to look at the life of the building, because we are creating a physical translation of a dynamic process. Most architects feel that they finish the work when they hand over the building. But for the client, it is just the beginning." ■

Surface texture of the Nature Conservancy's walkways is rough enough to scrape mud off shoes in areas subject to frequent rain and snow.

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- ◆ **Read the article "Here's the Dirt on Green Housekeeping" using the learning objectives provided.**
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QUESTIONS

1. What can be done to keep dirt out of a building?

2. How can bathroom finishes and equipment be specified to reduce bacteria?

3. What can architects do in scheduling and specifying finishes to reduce VOCs?

4. What role does commissioning play in keeping a building healthy?

5. What does the layout of ductwork have to do with keeping a building healthy?

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Shedding New Light on Scientific Research

RAFAEL VIÑOLY HAS REINVENTED THE RESEARCH LABORATORY WITH NATURAL LIGHT AND FLEXIBLE WORK SPACES AT A NEW CANCER RESEARCH FACILITY IN GRAND RAPIDS.

By Barbara Knecht

If you ask New York architect Rafael Viñoly, FAIA, to describe his design for the labs in the Van Andel Institute for Education and Medical Research in Grand Rapids, he almost apologizes for the simplicity of the plan. It is a blunt solution on the surface, but it has been carefully detailed and enclosed in dramatic forms. The clients, Amway founder Jay Van Andel and his wife, Betty, created the institute to improve people's health, with a major focus on cancer research. Because the building was commissioned at the same time the institute was formed, Viñoly was conscious from the beginning that the new facility would be a tool to recruit high-caliber scientists. Phase I, a $42 million, 150,000-square-foot facility completed in October 1999, will house 180 to 200 scientists when fully operational. The building is anchored to the sloping, downtown site by a poured-in-place concrete spine. You enter at the third floor, and the lower two floors are pushed up against the slope of the site. A state-of-the-art auditorium for scientific lectures and an open area for gatherings occupy the entry floor. Above it are three laboratory floors, and below it are the vivarium and loading dock.

The translucent curving roofs create a dramatic silhouette in downtown Grand Rapids.

Evolution of the modern laboratory

Medical research labs are a relatively new building type. Once a subordinate university function, they evolved as separate institutions only in the 20th century. Louis Kahn defined the type in his Richards lab at the University of Pennsylvania and the Salk Institute in La Jolla, Calif. At Richards, the services run in vertical shafts and serve small, stacked floors of lab benches and offices, whereas at the Salk, services run to labs horizontally through the ceiling. Whether they are vertically or horizontally served, labs have generally followed one of these two designs. The workstation model then becomes an immobile bench connected to utilities in a fixed partition.

Viñoly visited Kahn's laboratories and others in the U.S. and abroad, noting that they invariably adhered to this rigid layout. But when he talked to scientists, he discovered that, despite the services and utilities provided, these environments were too "fixed" for their work. Laboratory investigations require specialized equipment, light- and temperature-controlled rooms, and numerous utilities, but space and equipment needs vary with each project. Scientists are acutely aware of the spatial and functional limitations of their work environments. "Scientists tend to be hands-on, and they are constantly tinkering with their work space, modifying and reconfiguring their lab tables," says Viñoly. Furthermore, principal investigators work with teams of scientists, and their needs grow and change depending on grants and research direction. A new grant and the arrival of a new investigator are typical triggers for major, and potentially costly, lab reconfiguration and renovation.

Viñoly organized the lab floors into three zones, ranging from permanently fixed services to the infinitely flexible. The smallest zone includes the public corridor, meeting spaces, and principal investigators' offices. The support zone contains most of the fixed, or "hard," functions, such as walk-in freezers, tissue culture, and electron microscopes. The third zone is located under the dramatic cascade of translucent roofs, where open, daylit research spaces are equipped with movable lab benches and alcoves with sinks and fume hoods, some of which use flexible, or "soft," connections to the services. Special equipment hookups run in an interstitial space over the support zone (and sink alcoves); data, electricity, telephone, air, and gas lines run under the floors in a similar space all the way out to a raceway at the perimeter of the building. These, in turn, are fed by vertical shafts in the spine.

Barbara Knecht is an architect and principal of a New York City-based consulting firm. She writes about architectural technology, design, and housing policy.

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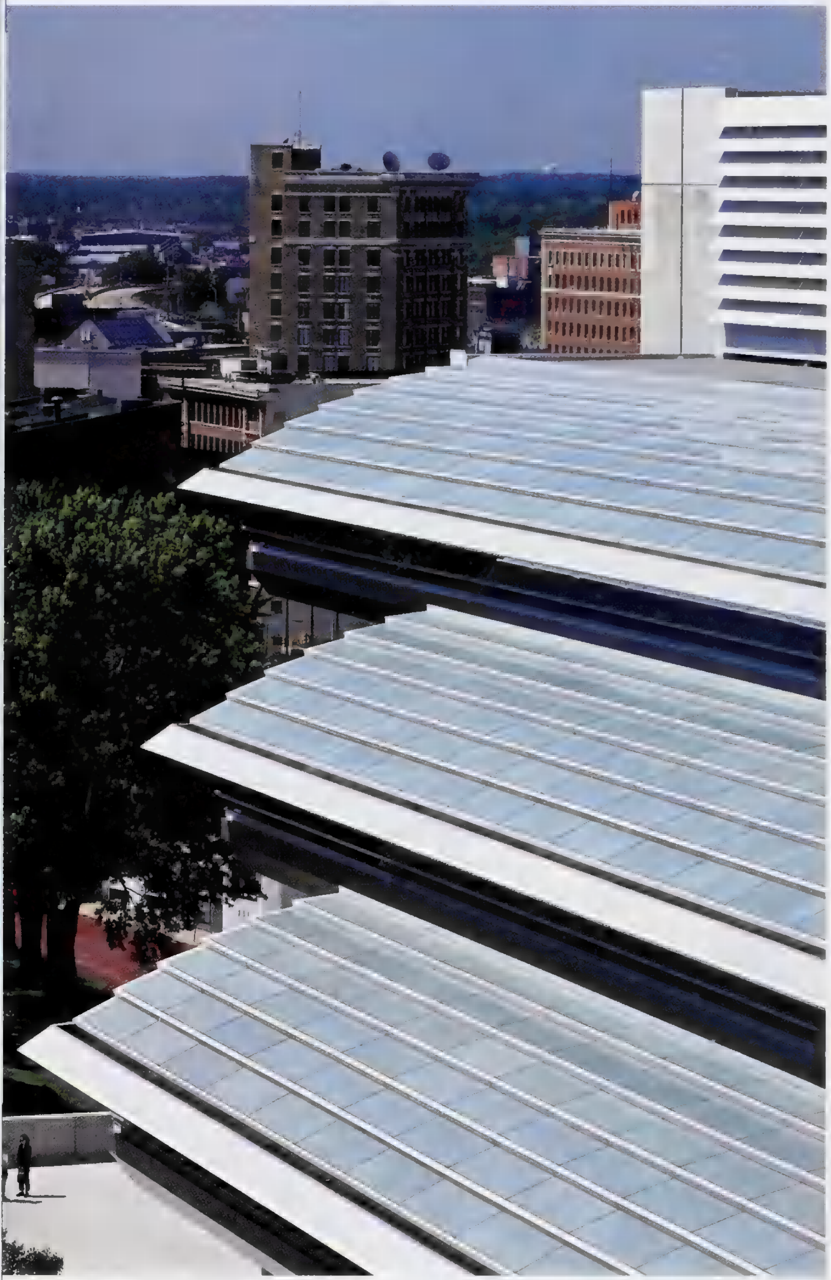
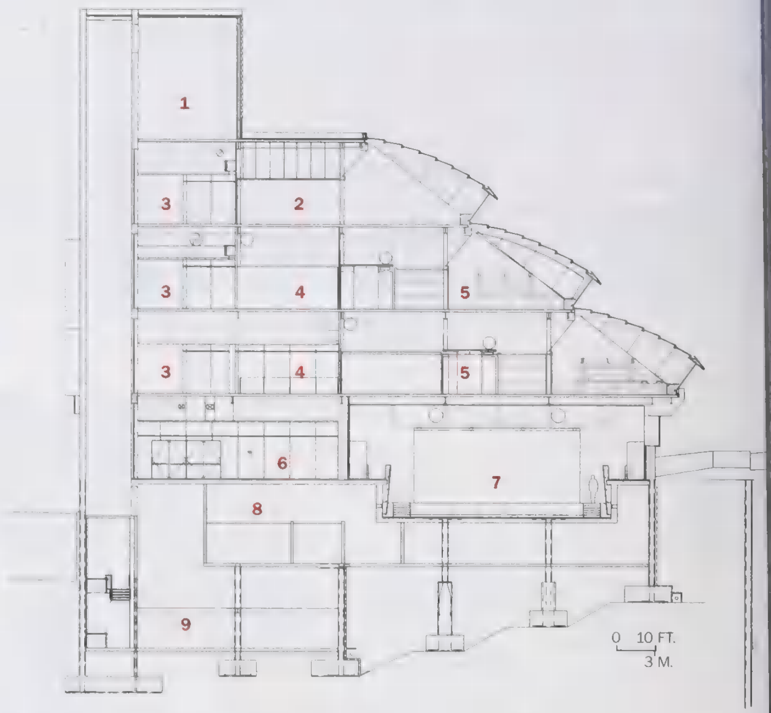


Entry (opposite, bottom) to the institute is on the uphill side at the auditorium level. The glass roofs (above and opposite, top) cover three floors of lab space and are fritted to reduce solar gain.



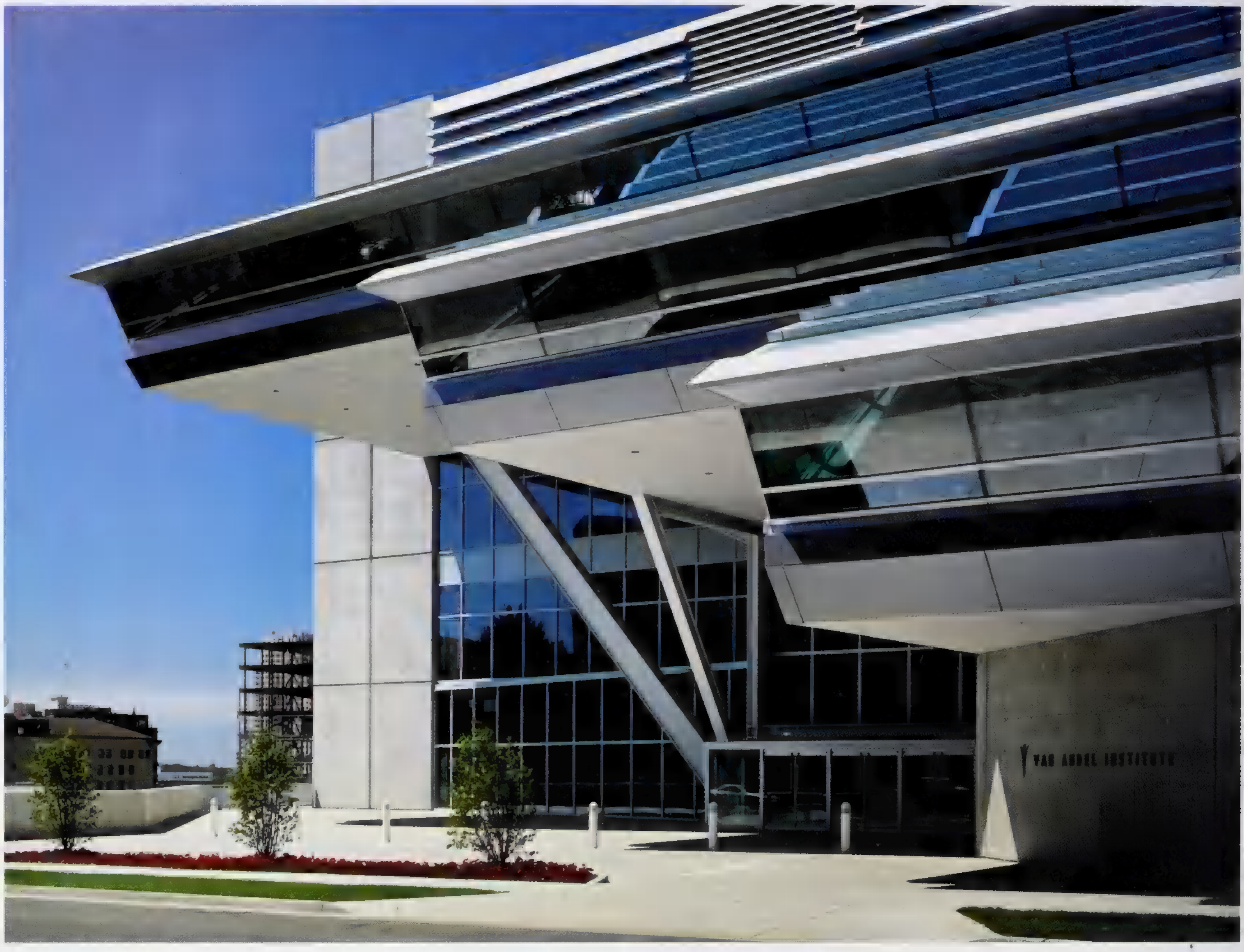
1. *Penthouse*
2. *Administration/ future lab*
3. *Corridor/office*
4. *Support zone*
5. *Laboratory*
6. *Gathering place*
7. *Auditorium*
8. *Vivarium*
9. *Loading*

Because scientific research is collaborative as well as competitive, the client had another reason for wanting more flexibility, which potentially promotes professional and social interaction. "The open lab that provides an environment for exchange is not a new idea, but it has been a lot harder to realize in fixed environments," says Dr. George F. Vande Woude, the institute's research director.

With a zoning strategy in place, Viñoly moved from the general to the particular and created maximum flexibility in the lab benches and the research spaces. "It turned out that there wasn't any flexible bench furniture on the market, so we designed a new bench," said Jay Bargmann, project manager at Rafael Viñoly Architects. Grand Rapids-based Steelcase manufactured the bench. Echoing the building's massing, the bench has a vertical spine with projecting surfaces and lights. The work surface is adjustable, moving from desk height for computer work to countertop height for traditional lab work. A fixed light at the top of the spine illuminates the work surface. A second, adjustable task light is located on the underside of one of the overhead shelves. Cabinets can be removed from underneath the countertop to increase work space.

"THE OPEN LAB THAT PROVIDES AN ENVIRONMENT FOR EXCHANGE IS NOT A NEW IDEA, BUT IT HAS BEEN A LOT HARDER TO REALIZE IN FIXED ENVIRONMENTS."

Data, electricity, telephone, air, and gas lines run in a horizontal channel the length of the lab bench and can be quickly hooked up through the floor. Connection to the underfloor utilities is either from the perimeter wall raceway or from cores with watertight sleeves through the floor. This allows the benches to be configured in virtually



The spine (right) is exposed, poured-in-place concrete and houses offices, public corridors, and fixed lab spaces. The projecting lab floors (above) are constructed of aluminum-clad steel frames and clear side panels, with a fritted glass roof.

any combination or direction. Using only a custom-designed dolly and a wrench, two people can disconnect, move, and reconnect a 12-foot long bench.

Shedding light on research

Laboratories are energy hogs. Not only are they occupied 24 hours a day, but the work requires high levels of illumination, and air is never recirculated. Much of this energy use is unavoidable and not easily corrected by architectural design. However, one of the most distinctive architectural elements of the building, a trio of curving, translucent roofs, contributes to a decrease in energy consumption. The glass panels are fritted with ceramic patterns fused to the surface of the low-e coated glass. Although fresh air is constantly heated and circulated, the fritted glass with a low-e value of .2 and shading coefficient of .31 increases human comfort and delivers exceptional light quality, often reducing the need for electric light during the day. Bargmann

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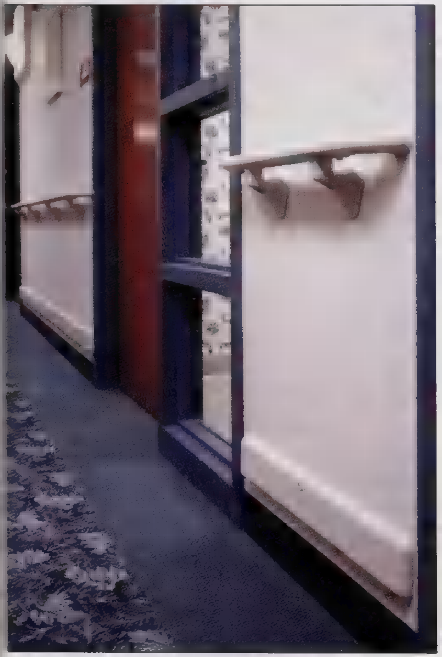

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describes the effect: "Looking across the labs, the room glows, and if you look straight up, you can actually see through the dot pattern to the sky. [The glass] makes [for] very even lighting—the floors and walls and benches are illuminated uniformly. It feels as if you are inside the light, almost like being inside a liquid." Director Vande Woude agreed that the light effects are amazing, especially during the long Michigan winter. He remarks that he also finds the sound of rain quite soothing and joked that a foot of snow on the roof actually increases the translucent effect.

"IT FEELS AS IF YOU ARE INSIDE THE LIGHT, ALMOST LIKE BEING INSIDE A LIQUID."

The three-zone system at Van Andel is expected to significantly reduce the cost of renovations over the long term and streamline scientists' ability to adapt their environments in the short term. So far, reported Vande Woude, the design has proved suitable to their needs, and the sense of space and openness in the labs, public areas, and corridors has been inspiring. In the second phase, another spine will be built, joined to the first by a bridge, and a mirroring cascade of translucent roofs will descend the hill. ■

The president's office (top) and the research space (above) receive abundant natural light. The custom lab benches are made of bacteria-resistant phenolic resin and can be easily dismantled and reconfigured.

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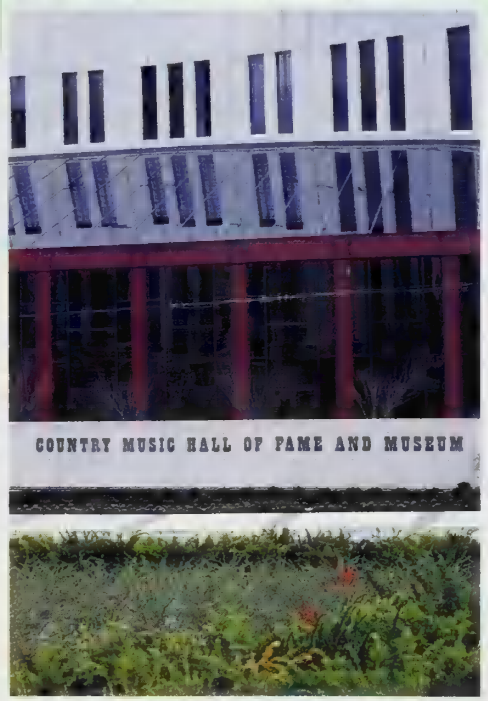

The Country Music Hall of Fame and Museum in Nashville, Tennessee, is a $37 million structure that, when completed in May of 2001, will offer 40,000 sq. feet of exhibit space and the 213 seat Ford Theater. The building spans an entire city block and soars 107 feet above a lush urban park. This museum sets a new standard for state-of-the-art design and symbolizes the importance of Country Music in America's heritage.

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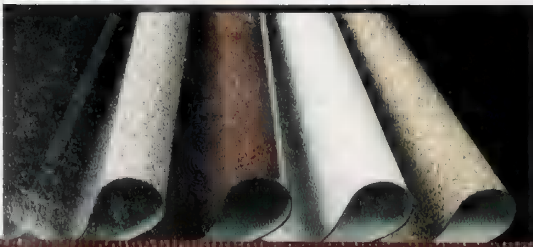

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Tech Briefs

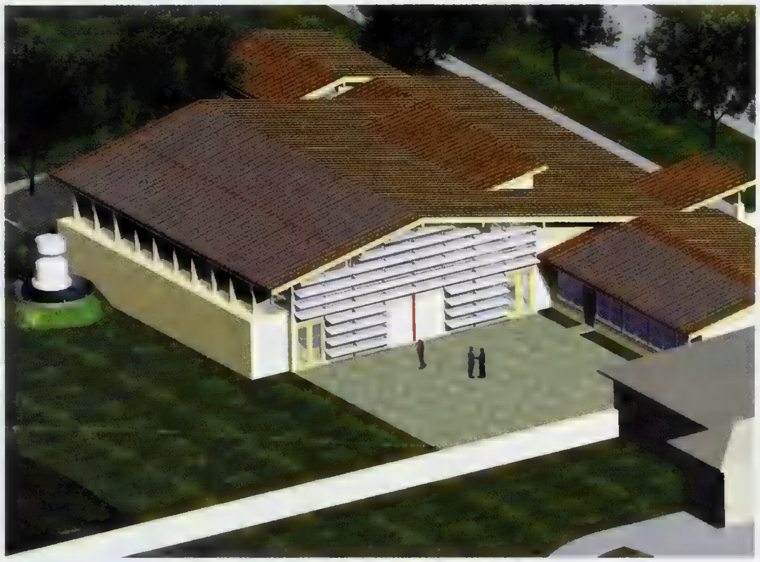
A church in a casino town in the Nevada desert gets a sustainable fellowship hall • Architects are discovering the design potential and efficiency of tilt-up concrete construction

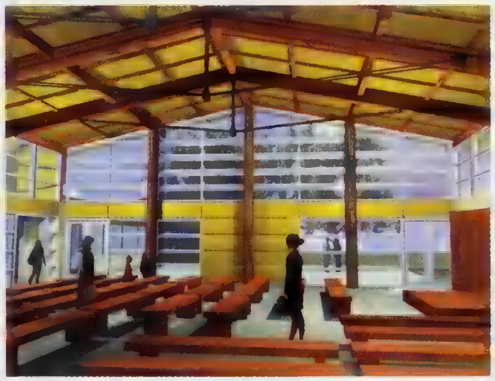
A fellowship hall in Reno rises above honky-tonk with splendor and sustainability

Reno, Nevada, calls itself the "Biggest Little City in the World," but it still plays second fiddle to its southern neighbor, Las Vegas, when it comes to casinos and kitsch. It does have the natural advantage of being located at an altitude of 4,400 feet in the spectacular landscape of the Sierra Nevada range east of Lake Tahoe. On the edge of town, Pfau Architecture of San Francisco is building a fellowship hall for the Unitarian Universalist Fellowship of Northern Nevada (UUFNN) that is both serene and sustainable.

Phase 1 of the $1.25 million project, scheduled for completion in October 2001, consists of a 3,000-square-foot great room at the heart of the building and meeting rooms, offices, and an entrance gathering space located adjacent to the great room at the east side. Although squeezed from the north and east by the freeway, casinos, and strip office development, the site is buffered to the south by land slated for wetlands park development and walking trails, and it boasts spectacular views of the mountains to the south and west.

Charged by the client to build sustainably, principal Peter Pfau and project manager Marcos Ancinas organized the siting, massing, and building systems into a functional composition that will do little environmental harm. Systems and materials were designed and selected in part for their contribution to the goal of net-zero energy consumption. Radiant heating and cooling in the concrete floor slab is delivered by tubes filled with distilled water stored in a 10,000-gallon reservoir on the west side of the building. A supplemental fan-coil system, also fed by the heated and cooled tubes, works in conjunction with the ventilation in the great room. "Reno is the ideal climate—high altitude with dry air and temperature extremes—for this kind of mechanical system," explains Ancinas. Building-use patterns also support the selection of such a system.





The hall roof (above) has south-facing photovoltaic panels. A chiller sits on top of a 10,000-gallon water reservoir. The interior (left) is built of recycled log columns and cedar glulam beams.

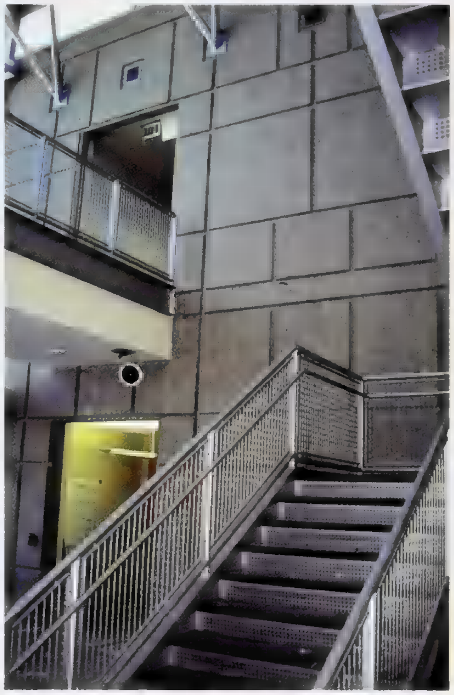
Typically, religious buildings are not in operation every day; however, most mechanical systems perform better with regularly scheduled fluctuations. With a radiant system, the floor temperature in the 24-foot-high great room can be maintained at a baseline of 59 degrees in winter and 69 degrees in summer with little energy expenditure necessary to raise or lower it for comfort. The concrete floor slab and water provide the thermal mass to maintain an even temperature, and perimeter insulation prevents heat loss. Since the reservoir is partially underground, all it takes to heat the water in winter is a swimming-pool heater, located in a mechanical space on the west side of the great room. In summer, the water is cooled as it passes over a fan-coil unit in the cooling tower above the reservoir.

A water cooling system called Night Sky, developed by the Davis EnergyGroup, consulting engineers for the project, will take advantage of cool summer nights and the metal roof. Instead of relying on the cooling tower, reservoir water will be pumped up and sprinkled over the cool roof, collected in the gutters, filtered, and returned to the reservoir. Nevada has recently instituted net-metering, a system whereby a building can return unused energy to the power grid and net out the electrical use at other times. Phase 2 (a library and additional energy components) will include the installation of photovoltaic (PV) panels integrated into the standing-seam metal roof. Given the use pattern, they will be able to generate more electricity than required to operate the building. "One of the engineers also pointed out that Night Sky will have the added advantage of cleaning the PV panels," remarked Ancinas.

Preventing thermal gain is the best way to ease the burden on the mechanical systems. Pfau and Ancinas designed sun shades for the south, west, and north sides of the building so that solar gain to the interior can be claimed in midwinter, when it is beneficial. Deep and widely spaced, the louvers are placed to preserve the all-important view of the mountains. Consistent with the desire for minimal impact on the environment, finish and structural materials are the same and were selected for health, beauty, and sustainability. High fly-ash concrete block, which is less energy-intensive to produce, is used in partitions and decorative applications. Other finish materials include reinforced concrete and medium-density fiberboard (MDF) manufactured without formaldehyde. Structural woods are certified forest glulam trusses and log columns, handpicked by members of the congregation from a nearby mill that cuts standing dead wood under a fire protection program of the Forest Service. With all this attention to sustainable systems, the Unitarian Universalist Fellowship of Northern Nevada promises to reflect the grace of the natural environment and rise above the local kitsch and clutter. *Barbara Knecht*

Refinement and engineering have expanded the benefits of tilt-up concrete construction

Fast! That has always been the attraction of tilt-up concrete construction. Recently, however, a trend towards more aesthetic experimentation is rapidly leading to a greater appreciation of the versatility of tilt-up construction. Invented early in the 20th century, the building system slowly found application in industrial and utilitarian buildings during the second half of the century, especially in southern and western states. Tilt-up buildings are erected from reinforced concrete wall panels that are precast at the job site. The panels are formed in a horizontal position by casting the panels on top of the building's floor slab or specially prepared casting slabs. After the panels cure, they are tilted and lifted into position by cranes. They are then temporarily braced and used as load-bearing supports for the building's roof and floor decks. Because the panels are cast at ground level, labor can be used more efficiently and safely, and the cost of scaffolding and vertical formwork can be eliminated.



Software developer Tibco used tinted concrete and reveals in its tilt-up construction.

In the past decade, however, there has been a surge of tilt-up activity with a 100 percent increase in the past five years alone and penetration into every region of North America, according to the Tilt-Up Concrete Association. Much of this boom is the result of the refinement of tilt-up for use on architectural projects. Architects have started "breaking out of the big-box tradition" by designing tilt-up structures that transcend its origins as a construction technique for factories and warehouses. Schools, offices, churches, commercial buildings, and even residences are now being constructed with the tilt-up method.

Two design directions dominate architectural tilt-up today. In the first, tilt-up replicates the appearance of more traditional buildings and materials, such as the 425,000-square-foot Mount Pleasant Town Center retail development recently completed near Charleston, S.C. Strict zoning and preservation guidelines required the architect to mimic the look and feel of the community's historical commercial district. Each of the project's 56 storefronts received a unique architectural treatment to create a streetscape spanning the spectrum of 20th-century commercial styles, from late Victorian and Art Deco to Main Street Modern. The architect accomplished this task by employing variations in setbacks, fenestration, and roof lines, and by finishing facades with thin-brick veneers, tile, paint, and EIFS. Although the storefronts are the antithesis of the big boxes typically associated with retail applications of tilt-up concrete construction, the developer found the system offered favorable economic and scheduling benefits.

Improvements in engineering allowed the headquarters of Incyte Pharmaceuticals to have larger openings in its tilt-up concrete facades.

Nonconductive dowels are used to sandwich two withes of concrete and a layer of rigid insulation.

In California, a cluster of projects in Silicon Valley demonstrates a second approach. Here, tilt-up has become the system of choice for Netscape, Echelon Software, Genentech, Incyte Pharmaceuticals, and other high-tech firms. Their buildings and corporate campuses showcase the emergence of tilt-up as a new structural medium with potential for fresh architectural expression. The large size and scale of tilt-up panels, ease of creating fenestration, plus freedom in creating relief, distinguish this system from others. This new tilt-up is characterized by explorations into the plastic nature of concrete to form moldings, rustication, reveals, curved panels, textured surfaces, and ornamentation. On many projects in the region, the concrete is integrally colored and abraded to expose the concrete aggregate, resulting in a material with visual depth and rich, animated surfaces.

New technology has also contributed to the broader acceptance of tilt-up. No longer limited to single-story buildings, tilt-up has been used successfully on mid-rise buildings and for panels up to 91 feet tall. Improved engineering has also made it possible to increase the size and number of openings in panels, so that some tilt-up walls can accommodate 50 percent fenestration. Large tilt-up panels provide outstanding shear resistance, a desirable feature in areas prone to hurricanes and earthquakes. Lessons from the Northridge earthquake, which led to the development of better structural connections between a tilt-up wall and the roof diaphragm, have improved the seismic performance of tilt-up buildings.

The tilt-up industry has matured as it has gained experience. A growing cadre of contractors throughout the country is capable of the quality assurance required to work within the tolerances required for architectural projects. As momentum gains, tilt-up construction is fast becoming an accepted addition to the architectural palette. Go to www.tilt-up.com or www.tilt-up.org for more information. *Michael Chusid*

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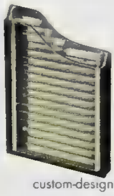

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Digital Architect

Software resources for lighting design

By Jerry Laiserin, FAIA

One definition of architecture, attributed to Le Corbusier, is the rendering of forms in light. CAD and computer visualization did not exist in Corb's day, but he would have appreciated the use of computers to study the effects of light, to design with an awareness of light, and to document the results.

Today, digital architects have at their disposal a wide range of software tools that enable them to design solutions to lighting problems for both daylight and electric light, to simulate lighting effects with mathematical accuracy and render those simulations with visually persuasive realism, and to create the requisite drawings, specifications, and schedules to ensure that their lighting designs are properly implemented. Software is also available for specialized lighting tasks, from solar shadow-casting and lighting-efficiency calculations to designing custom luminaires and controlling theatrical effects such as dimming, flashing, and color changes.

Architects may not need to master or own every lighting software tool, especially if they work with lighting consultants and designers, but they should at least be aware of the tools available, the way they work, and their strengths and limitations.

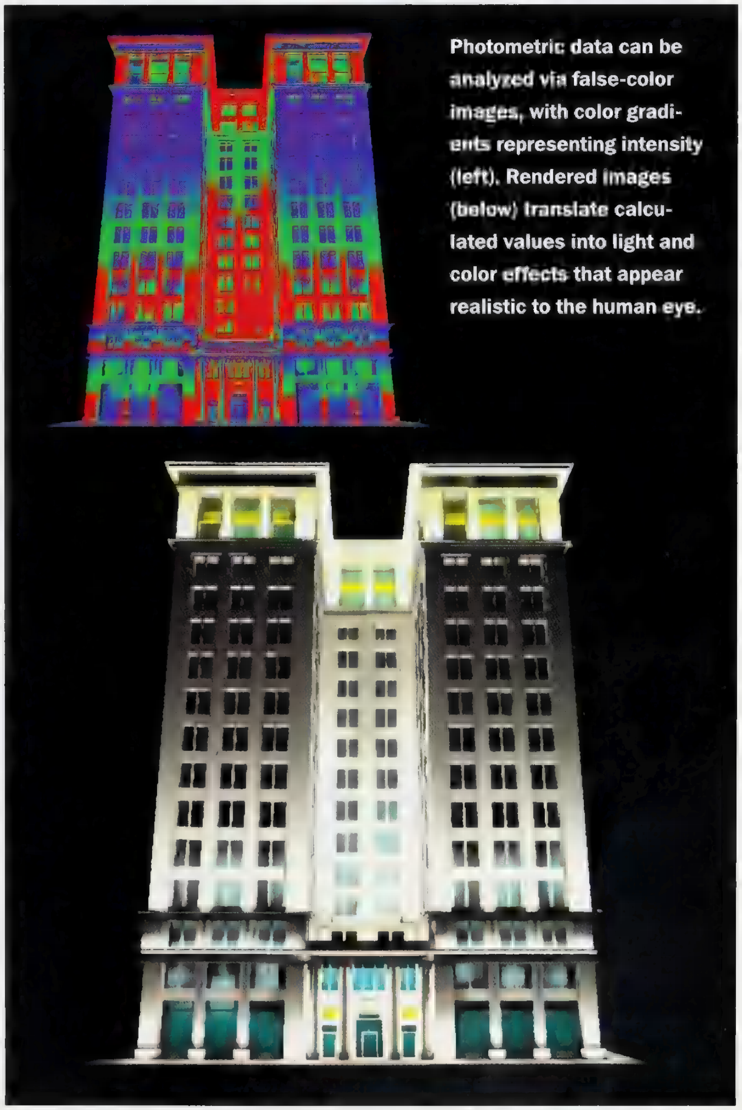
Contributing editor Jerry Laiserin, FAIA, provides strategic consulting services to architects and their technology providers.

WWW For more information on technology for architects, including reviews, vendor lists, and links, go to Digital Architect at **www.architecturalrecord.com**

Lighting and shading

Lighting design and analysis software simulate, or model, the physical behavior of light as it interacts with forms and surfaces of varying shapes, textures, and colors. For analytic or design purposes, software procedures, or algorithms, are applied to the geometry of a building or interior space to calculate the light energy falling on a surface from any light source, whether the sun or a lighting fixture. Electric lighting must often be designed to meet an acceptable level of illumination appropriate for the use of the space in question. For example, to achieve a desired level of uniform task illumination on 30-inch-high desktops, software would help the designer determine the number, intensity, and spacing of luminaires to be used.

Such calculations rapidly escalate in complexity as the number of lighting sources increases and their light radiation patterns vary. Also, different materials reflect light in different ways. Surfaces such as mirrors and polished stone reflect light directly, while others such as brick or painted wood diffuse it. The total light energy impinging on any surface includes both light radiating directly from light sources as well as light reflected from other surfaces. The initial result of such lighting calculations is an unwieldy listing of computer-generated photometric values that predict or correspond to what a light meter would read at each point in a physical space. These results can be more readily understood and assessed if the mathematical values of lighting intensity are plotted on a CAD model by color gradients or "false color," with warmer colors such as red and yellow corresponding to brighter light. The important distinction here is that mathematical accuracy in lighting simulation is separate from what most architects think of as realistic visualization in a rendering.


Photometric data can be analyzed via false-color images, with color gradients representing intensity (left). Rendered images (below) translate calculated values into light and color effects that appear realistic to the human eye.

Architects and their clients rightfully expect not just mathematically accurate lighting designs, but also visually believable images of those designs. In the past 15 years, the shading algorithms built into lighting and rendering software have shown steady improvement in their ability to display light effects realistically. Flat shading, the simplest approach, is capable of showing only direct light from a single source. A flat-shaded sphere looks like a disk, with no variation of lighting to suggest three-dimensional roundness. More advanced techniques, known as Gouraud and Phong shading, render a sphere as a segmented or smoothly rounded object, respectively.

The most effective shading and rendering methods are ray-tracing and radiosity. Ray-tracing calculation methods trace each ray of light entering the observer's eye back to the object from which it was reflected and, in turn, to the light source from which that ray originated. Thus, ray-tracing is a very efficient way to calculate and render direct lighting effects on reflective surfaces. However, it does not account for the kind of light-diffusing surfaces that most building materials are made from, nor does it deal with indirect light. Furthermore, ray-tracing is view-dependent; if the observer's point of view moves, all of the lighting values for the new scene must be recalculated.

IN THE PAST 15 YEARS, LIGHTING AND RENDERING SOFTWARE HAS SHOWN STEADY IMPROVEMENT IN ITS ABILITY TO DISPLAY VARIOUS TYPES OF LIGHTING EFFECTS REALISTICALLY.

Radiosity is a global illumination solution that calculates direct and indirect light on diffuse surfaces, including light that bounces from one surface to another. Because it models light behavior independently of an observer, one set of radiosity data for a scene or space can easily be rendered from different points of view without the need for recalculating lighting values. However, radiosity cannot render the specular reflections or lens flares that lend realism to views rendered with ray-tracing.

Thus, the most sophisticated analysis and rendering software combines ray-tracing (for direct light, or luminance) with radiosity (for indirect light, or illuminance). Armed with this vocabulary of lighting analysis and rendering techniques, architects can more intelligently sort through the wide variety of lighting software available.

Ray of light

RADIANCE, which is generally acknowledged to be the most accurate lighting-simulation system, was developed at the Building Technologies Program of Lawrence Berkeley Laboratory (LBL) from the late 1980s through the 1990s. A complex set of over 100 separate routines in the UNIX operating system, RADIANCE requires substantial computing hardware resources and an expert operator to use it. Even though the software is free, it is typically used only on very high profile projects, such as the Rose Center for Earth and Space ["Digital Architect," AUGUST 2000, page 177], whose size and scope can justify its high cost in computer resources and operator skill. Researchers at LBL are currently working on Desktop Radiance, an interactive, user-friendly lighting-simulation system that runs on Windows software and can be used by those with average computer skills. A similar commercial effort, RayFront, which also works as a direct extension of AutoCAD or IntelliCAD, is under development by Schorsch Software in Germany.

Architects willing to sacrifice analytic power for greater flexibility and ease of use likely will opt for a commercial CAD-linked rendering program, such as Accurender, Art-Lantis, or Lightscape. Typically, such software blends ray-tracing and radiosity techniques via clever programming that yields much of the benefit of a RADIANCE solution at only a fraction of the cost, time, and effort. Accurender is available as an AutoCAD plug-in and also comes directly built into Revit's CAD software. Art-Lantis works with both the Windows and Macintosh operating systems and comes in versions adapted specifically for use with ArchiCAD or VectorWorks.

Lightscape functions as an external renderer on any AutoCAD DWG file or compatible DXF file, but this flexibility imposes some cost in image preprocessing (ArrisCAD sidesteps this problem by incorporating Lightscape preprocessing in Arris model files). However, powerful as they are for visualization, such renderers are no substitute for rigorous lighting analysis.

Many designers prefer full-featured software packages that include lighting analysis, rendering, and computerized libraries of light sources with accurate photometric data. Two of the most complete and popular lighting software suites are Lumen Micro from Lighting Technologies and AGI-32 from Lighting Analysts. Both can perform design analysis and specification through the familiar Windows interface but are more suited for full-time lighting designers than for architects.

The guiding light

In addition to calculating general lighting solutions and visualizing the results, architects need to accommodate special lighting problems and document their designs. One common yet specialized lighting problem is accurately casting sun shadows for zoning and "sky-exposure" requirements. ShadowFX, an AutoCAD plug-in from Britain, is targeted for just this task. Calculating lighting efficiency, although achievable in the full-featured lighting software suites, also can be accomplished with more focused programs, such as AutoLux from Independent Testing Laboratories. Lighting Technologies, makers of the comprehensive Lumen-Micro software, offers a series of moderately priced software packages marketed under the "Simply Lighting" label. Users enter lighting data into simple design wizards, and the software calculates values for routine indoor, outdoor, or roadway lighting problems. The same vendor also offers Photopia, a handy tool for those lucky enough to design custom luminaires. Finally, design and control of theatrical lighting, with preset scenes and choreographed effects, are the province of specialized tools such as VectorWorks Spotlight or the UK-based AutoLightPro.

Thumb through the Web site

Shopping for lamps and luminaires, which was once done mostly by perusing page after page of print catalogs, can now be accomplished via the Internet. Web sites such as LightingUniverse.com allow both browsing and purchasing of lighting fixtures, along with downloading of photometric data that's used in the various lighting programs described above to assess and determine lighting requirements. The site also allows users to download symbols of lighting fixtures for use in CAD drawings.

Convenient libraries of lighting symbols for use in AutoCAD drafting are available from MSZ Design as AutoBlock2000. The latter program allows users to export its symbol lists to an Excel spreadsheet for further analysis or to LightWright, from John McKernon Software, which combines a spreadsheet and database containing all the lighting "rules" and intelligence to generate lighting schedules for inclusion in construction documents or specifications.

Thus, there is a lighting software tool for virtually any space, use, or need. The great Louis Kahn once said of architects, "Our work is of shadows; it belongs to the Light." For architects in the 21st century, who benefit from a tremendous variety of sophisticated lighting software tools, much of the Light to which their work now belongs comes from the glow of their computer monitors. ■

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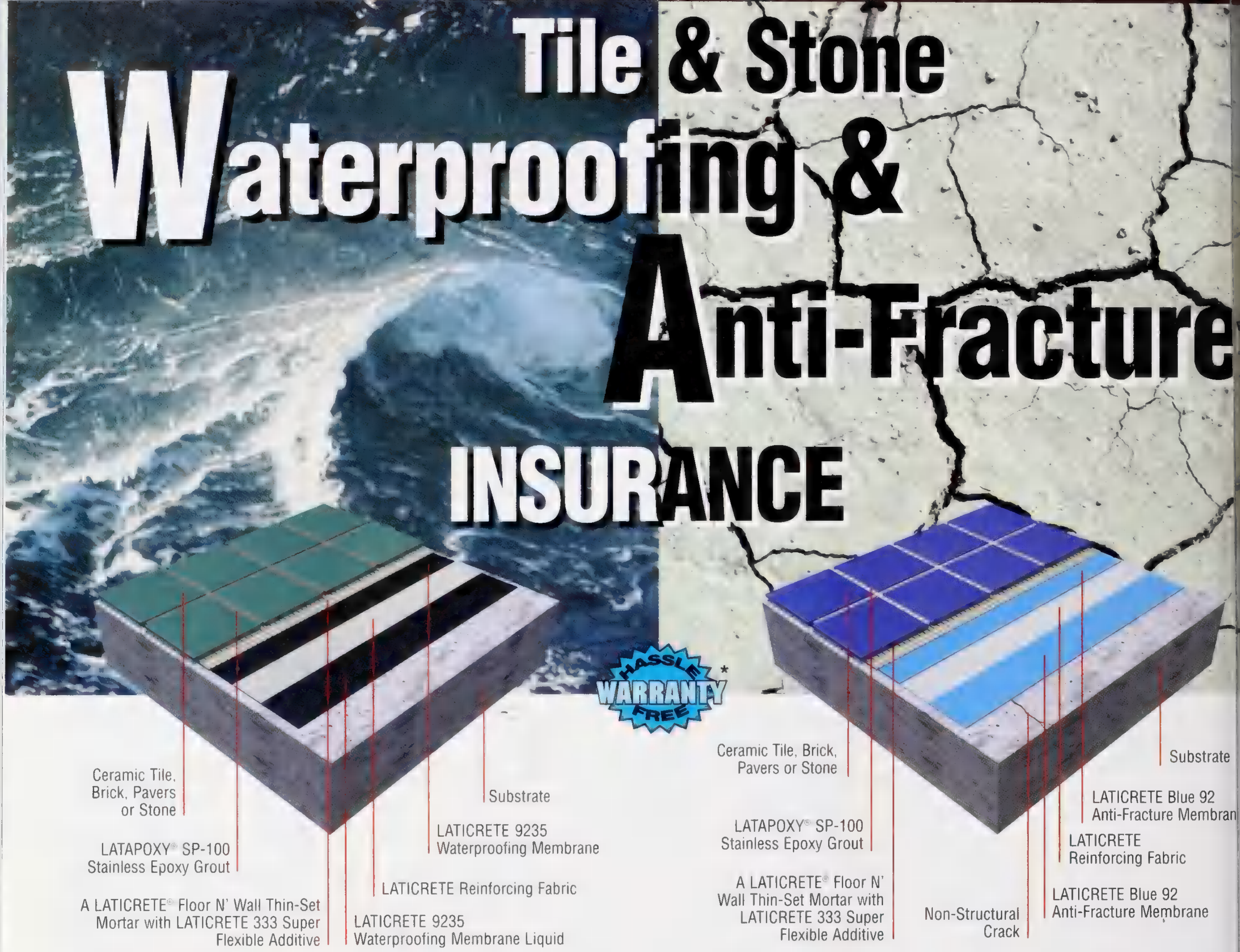
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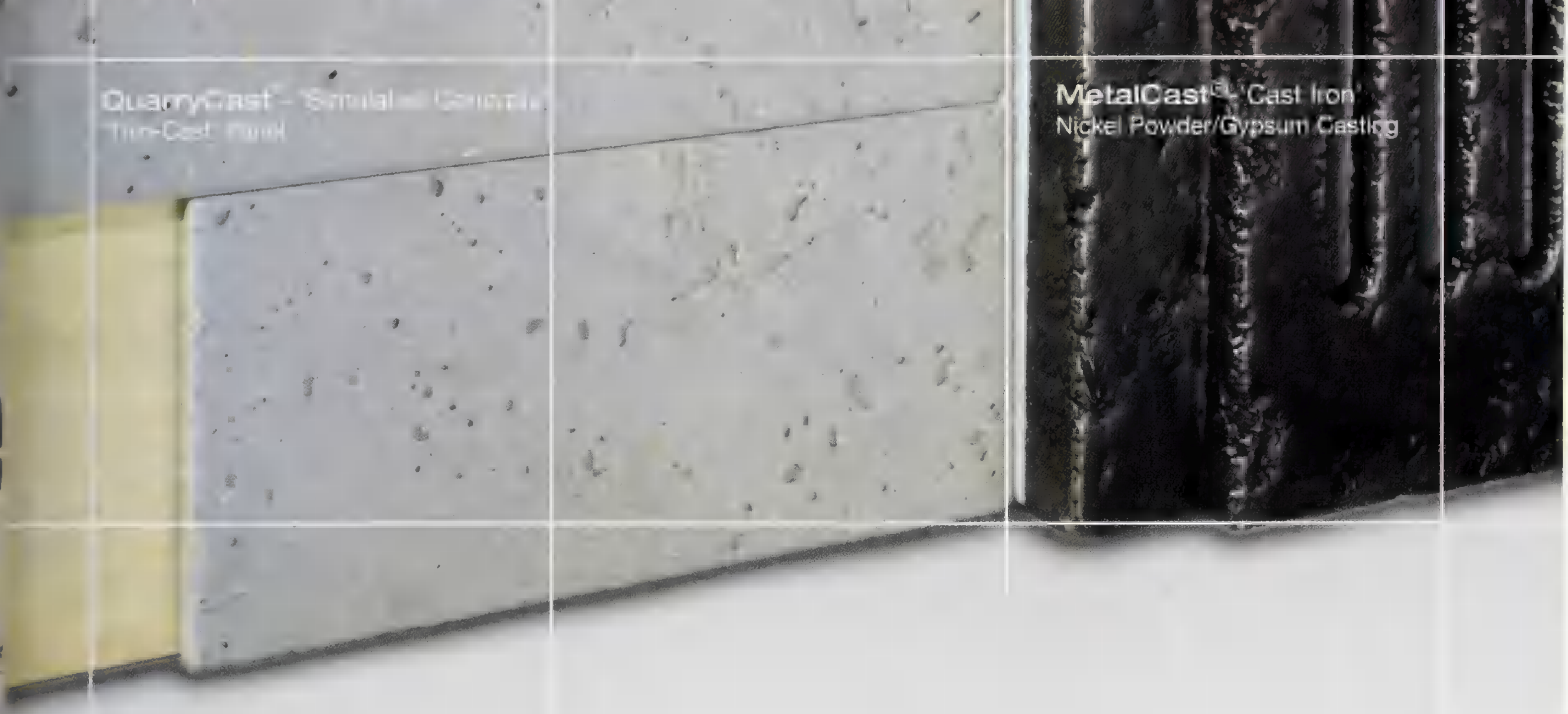

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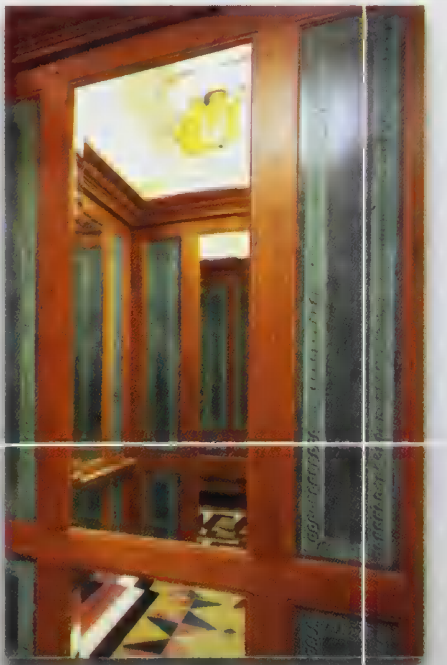

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- Aesthetics: Northern hard maple flooring has a natural beauty. The natural light color is more visually pleasing to athletes, compared to darker hardwoods such as red or white oak. Northern hard maple is densely grained with rich, consistent color and fewer imperfections than other hardwood species. The natural light color also provides an excellent contrast to paint used to stripe floors for activities such as basketball and volleyball.
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- Environmental Responsibility: Contrary to what you may have heard, we are not running out of hardwoods. U.S. government forest statistics show that there were 70% more hardwoods in 1997 than in 1952. Each year, nearly twice as many cubic feet of timber is added to the U.S. hardwood forest inventory than is harvested. Further, wood is the only natural resource on Earth that is at once renewable, recyclable, biodegradable and re-useable. The energy required to grow our timber supply is free – it comes from the sun. And, although wood accounts for almost half of the total annual industrial raw material tonnage consumed in the U.S., lumber and wood product manufacturing processes account for only about 4% of energy consumed by U.S. industrial raw material manufacturers.
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For these and a variety of other reasons, it is not surprising that northern hard maple has been architects' preferred choice for indoor athletic surfaces for the last century.

SELECTION CONSIDERATIONS FOR YOUR PROJECT

When considering which flooring system is best suited for your installation, it is important to consider different attributes of each system. Always consider the following characteristics: Cost, Appearance, Elevation Requirements, End Uses for the Facility, and Performance Characteristics of the Floor. Here are some quick pointers for each:

COST

Cost should be viewed in two ways: installed cost and life cycle cost. If compared solely by installed cost, wood athletic flooring can be more expensive than synthetic materials. Wood athletic flooring systems are less expensive to maintain and last considerably longer than their synthetic competitors.

The installed cost of maple floors varies from manufacturer to manufacturer depending on the subfloor system selected for the project, and the quality and type of surface maple specified for the installation. Most subfloor designs can be matched with a variety of maple surface materials to meet your project's budget.

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Use the learning objectives below to focus your study as you read HOW TO PROPERLY SPECIFY MAPLE ATHLETIC FLOORS. To earn one AIA/CES Learning Unit including one hour of health safety welfare credit, answer the questions on page 290 and follow the reporting instructions on page 382. Use the Continuing Education self-report form on *Record's* Web site, www.architecturalrecord.com.

LEARNING OBJECTIVES:

After reading this section and answering the self-test questions at the end, architects will be able to:

- Describe the various categories of wood sports flooring system subfloor configurations
- Describe the various types of wood sports flooring surface materials
- Cite the most critical specification considerations when designing athletic facility floors

APPEARANCE (AESTHETICS)

Appearance is a subjective specifying consideration. All maple floors will have different aesthetics based on the type of flooring specified (strip, finger jointed strip, parquet), the MFMA grade of flooring specified (First, Second and Better, Third and Better, Third, or Utility Grade), the selection of gameline paints and color schemes, and the type of finish you specify. Your client may desire a basketball court that looks like the Boston Celtics' patterned floor, or may want the look of a strip floor. When specifying maple sports flooring, be sure to ask the client what he expects the flooring to look like when installed. This will help you to recommend the appropriate maple surfacing materials as well as properly choose paints and finishes to give your project the desired finished appearance. Remember, grading of maple flooring products affects aesthetics – not performance.

SLAB DEPRESSION/FLOOR ELEVATION REQUIREMENTS

This is an extremely important specifying consideration on a retrofit project. Some subfloor designs are low-profile, while others are higher-profile. Be advised: sports flooring system profiles are not necessarily an indication of surface performance characteristics. Manufacturers can provide you with slab depression requirements for all of their subfloor systems.

When specifying sports flooring in a new installation, consult with manufacturers to obtain the proper slab depression measurements for the system(s) you are considering for the project.

END USES FOR THE FACILITY/ PERFORMANCE CHARACTERISTICS

Performance characteristics are important considerations when choosing the subfloor system and maple surface materials. Make sure you consider the appropriate performance characteristics for the activities that the installation will regularly experience.

CONSIDER THE FOLLOWING PERFORMANCE CHARACTERISTICS WHEN CHOOSING A FLOOR SYSTEM:

Shock Absorption — As an athlete impacts a sports surface, the impacting force is translated into two resultant forces — one absorbed by the floor and the other returned to the athlete. While hard surfaces such as concrete and asphalt provide little or no force reduction for the athlete upon impact due to running, jumping or falling, maple sports floor systems absorb these impact forces (shock) and are rated by the percentage of force reduction they provide as compared to hard surfaces. For example, a sports floor with a force reduction value of 60% will absorb 60% of the impact force and return 40% of that force to the athlete. Since different sports make different demands on athletes, various force reduction characteristics may be prescribed for various sports.

Shock absorption should be considered for any sports floor installation.

Vertical Deflection and Area of Deflection — The measurements of both area and vertical deflection are interdependent. However, in the total scheme of performance characteristics, the two together form a criterion for deformation control.

Vertical deflection deals with vertical displacement of the flooring surface during impact, for athletes performing in close proximity to each other. For example, an average-sized person jumping on a concrete floor would transmit zero vertical deflection, while that same person jumping on a trampoline may create a vertical deflection of several inches. The area of deflection is a measurement of the surface of the floor set into motion during impact. A person jumping on a trampoline, for example, creates a very wide area of deflection. Someone jumping on sand creates a very limited area of deflection.

Consider deformation control when activity will be congested on the floor.

Ball Bounce — The measurement of a basketball's response reflecting (rebounding) off the maple surface as compared to its response off a hard surface such as concrete is referred to as ball bounce. At 100% rebound, the basketball reflects to a height equal to its response off concrete.

Ball bounce may not apply to all sports activities.

Surface Friction — Often called the coefficient of friction or sliding coefficient, this characteristic is used to measure a floor's ability to control the sliding of athletes on its surface. For a sports flooring system, the surface friction must be high enough to prevent premature and uncontrollable sliding of athletes on its surface, but also low enough to permit sliding off an extreme force (such as that from colliding with another athlete) when such a force is exerted upon an athlete. In addition, there may be federal and local requirements to be incorporated such as those enforced through the ADA.

Surface friction is a direct function of the finish on the surface and carries equal importance in all activities.

Rolling Load — Due to the potential damage to a wood floor system caused by some maintenance machines and game equipment, the rolling load characteristic is very important to all sports floors. This characteristic is applicable to rolling loads caused by rolling equipment and furniture. Additional provisions to protect the floor should be considered for items such as high lifts, portable backstops, bleachers, etc.

Compression Strength — (a.k.a. maximum crushing strength) — Though this is not a performance characteristic per se, the compression strength (or maximum crushing strength) of hardwood flooring is another important criterion to consider when specifying a sports floor. While Northern Hard Maple has one of the strongest compression values of all hardwood species, it is important to evaluate the point loading effects of using portable backstops, bleachers, equipment carts and gym equipment on the floor. It is recommended that the owner consult with the equipment manufacturer when specifying the proper wheel for use in the facility. When designing your athletic facility, know the weights and stresses to which your flooring will be subjected.

Please note: Performance criteria are interdependent. A higher or lower value for any of the performance characteristics addressed in this section may influence other characteristics in the flooring system. Variances are also inherent in performance test data on a single floor. Floors tested in accordance with DIN 18032 Part 2 will exhibit a range of values for each performance characteristic.

The following matrix is a general guideline to assist in determining which performance characteristics to consider when selecting an MFMA maple sports flooring system. It should not be used as a specification for a specific system.

GENERAL PERFORMANCE CHARACTERISTICS

The following matrix indicates the relative importance of general performance characteristics for various sports activities. Rolling Load and Surface Friction are equally important for all sports activities.

Sports Activity:		Multipurpose Sports	Basketball	Volleyball	Aerobic & Dance	Racquet Sports	Roller Skating
Performance Characteristics	*DIN*						
Shock Absorption	*53% minimum*	◒	●	●	●	◒	◒
Vertical Deflection	*2.3 mm minimum*	◒	◒	◒	◒	◒	◒
Area of Deflection	*15% maximum*	◒	◒	◒	◒	◒	◒
Ball Bounce	*90% minimum*	◒	●	○	○	◒	○

● = very important ◒ = somewhat important ○ = not applicable

Please note: A higher or lower percentage of any of the performance characteristics addressed in this matrix may influence other characteristics in the flooring system. The matrix is simply a general recommended schedule to refer to when considering an MFMA maple sports flooring system. It should not be used as a specification for specific systems. Consult with any of the MFMA milling company manufacturer members for performance characteristics' data on their sports flooring systems.

SPECIFYING A MAPLE SPORTS FLOORING SUBFLOOR SYSTEM

Now comes the hard part: deciding what subfloor system to specify for your project. MFMA manufacturers have spent years testing and developing a host of subfloor systems to meet the needs of athletes and other users.

There are three basic subfloor designs: floating systems, fixed systems, and anchored resilient systems.

Floating systems are exactly what they sound like – they "float" over the concrete substrate and are not mechanically fastened to the concrete slab in any way. Fixed systems are mechanically fastened by some method (anchor pins, screws, adhesive, etc.) directly to the concrete substrate. Anchored resilient systems are mechanically fastened to the concrete substrate, but have a combination of components that allow varying degrees of additional resiliency within the subfloor system.

There are benefits and drawbacks to each basic design category depending on the unique parameters of your project.

Start your specification decisions by asking questions:

- Who will be using this floor?
- What activities will be performed on the surface?
- How often will the facility be used in an average year?
- Is the facility going to be subjected to long idle periods?
- What is the climate in the area of the installation?
- What types of HVAC systems can I specify for the space?
- Is the installation below-grade, on-grade, or above-grade?

Answers to these and other questions will help you to eliminate subfloor designs that are inappropriate for your project.

PROPRIETARY ANCHORED RESILIENT SUBFLOOR SYSTEM DESIGNS

Multiple combinations of steel, wood, composite metal, plastic, neoprene, and rubber are signatures of most anchored resilient subfloor systems. Manufacturers have created proprietary menus of combinations from which to choose. Anchored resilient subfloor systems combine features of both floating and fixed systems.

PROPRIETARY FIXED AND FLOATING SUBFLOOR SYSTEM DESIGNS

MFMA Manufacturers offer a variety of proprietary fixed and floating systems that they have developed in some cases for specific applications. Each has unique features and benefits. Keep in mind that some of these subfloor systems have been designed for particular site conditions or expected uses (i.e. below-grade installation, installation in an area of widely-varying humidities, use in an aerobics facility, use for modern dance stage).

"GENERIC" FIXED AND FLOATING SUBFLOOR SYSTEM DESIGNS

Most proprietary anchored resilient, fixed and floating subfloor system designs have evolved over the years from the designs of a number of "generic" subfloor systems. Each of these systems has been on the market for many years, and has been successfully installed in hundreds of facilities worldwide. We refer to them as "generic" because the basic designs are not patented by one manufacturer, and each system is generally available from all manufacturers. The following is a short description of each of the "generic" MFMA subfloor designs:

Cushioned Sleeper System — The cushioned sleeper floating-floor system consists of 2" x 3"x 4" (nominal) kiln-dried hemlock, spruce, pine or fir sleepers installed over 3/8" x 2 1/4" x 3" or 5/8" x 2 1/4" x 3" rubber or neoprene pads. The pads are mechanically fastened to the bottom of the sleepers and are generally spaced at 1-ft intervals on the sleepers. The sleepers with pads are installed end-to-end at right angles to the direction of the finished maple surface with end joints staggered 24" in adjacent rows. Sleepers are spaced between 8" and 16" o.c. depending on the thickness and grade of the maple flooring surface and the resiliency required for the project. The surface maple, sleepers and pads are installed over a seam-sealed 6 mil. polyethylene vapor barrier.

Cushioned Sleeper with One Layer of Plywood System — The cushioned sleeper with plywood floating-floor system consists of 2" x 3" x 4" (nominal) kiln-dried hemlock, spruce, pine or fir sleepers installed over 3/8" x 2 1/4" x 3" or 5/8" x 2 3/4" x 3" rubber or neoprene pads. The pads are mechanically fastened to the bottom of the sleepers and are generally spaced at 1-ft intervals on the sleepers. The sleepers with pads are installed end-to-end at right angles to the direction of the finished maple surface with end joints staggered 24" in adjacent rows. Sleepers are spaced 12" o.c., and a layer of 15/32" x 4" x 8" APA rated, 4-ply CDX plywood is installed over the sleepers at either a 45 or 90 degree angle to the direction of the finished maple surface. The surface maple, plywood, sleepers and pads are installed over a seam-sealed 6 mil. polyethylene vapor barrier.

Double Plywood System — This low profile floating floor system consists of two layers of 15/32" x 4" x 8" APA rated, 4-ply CDX plywood generally installed at 45 and 90 degree angles to the direction of the finished maple surface. 3/8" x 2 1/4" x 3" or 5/8" x 2 1/4" x 3" rubber or neoprene pads are mechanically fastened to the underside of the bottom layer of plywood and are generally spaced at one foot intervals (32 per plywood sheet). The surface maple, plywood and pads are installed over a seam-sealed 6 mil. polyethylene vapor barrier.

Nail-in-Channel System — This fixed system consists of maple flooring installed over steel channels with a PVC, plywood or hardwood core nailing channel. Each nailing channel is set into 5/16" grooves spaced 12" o.c. in 1/2" or 5/8" thick fiberboard or closed-cell foam underlayment, and the steel channels are fastened through the underlayment and into the concrete slab using 5/16" head diameter steel channel anchors. The maple flooring is anchored to the subfloor materials using 2" barbed cleats or 15 gauge coated staples, which are clinched as they are driven into the core of each steel channel. The entire system is installed over a seam-sealed 6 mil. polyethylene vapor barrier.

Channel and Clip System — This fixed system consists of maple flooring installed over 16 gauge steel channels using 16 or 20 gauge steel clips to fasten the flooring to the subfloor components. Three different clip designs are available, and are usually specified with a particular thickness of maple flooring (clip-over-tongue design with 25/32" or 33/32" thick maple, clip-under-tongue design with 33/32" thick maple, or backwards-clip design with 27/32" thick maple). Each fastening channel is set into 5/16" grooves spaced 12" o.c. in 1/2" or 5/8" thick fiberboard or closed-cell foam underlayment, and the steel channels are fastened through the underlayment and into the concrete slab using 5/16" head diameter steel channel anchors. The entire system is installed over a seam-sealed 6 mil. polyethylene vapor barrier.

QUESTIONS YOU SHOULD ASK WHEN SPECIFYING A SUBFLOOR SYSTEM DESIGN

Ask questions of the manufacturer(s) of the systems you are considering, such as: Why did your firm develop this subfloor design? Are there particular site conditions or end uses for which this subfloor design is particularly well suited? Are there particular site conditions or end uses for which this subfloor design is ill suited?

SPECIFYING A MAPLE SPORTS FLOORING SURFACE

There are several types of maple surfacing products from which to choose. Maple flooring comes in three basic configurations: random-length strip (the most popular and most common), finger-jointed strip, and parquet. Each of these surface materials can be installed in a single direction, or can be laid in patterns such as a checkerboard, chevron, etc. Here are basic descriptions of each type of flooring:

Random-Length Strip — Individual pieces of flooring, typically 1 $^1/_2$" or 2 $^1/_4$" wide, with lengths between 9" and 8". The most common thickness specified is $^{25}/_{32}$", but $^{33}/_{32}$" thick random-length strip flooring is also available. This surface material is installed like a horizontal brick wall, with each piece being overlapped with adjacent pieces and fastened into the subfloor with cleats, staples or steel clips, depending on the subfloor chosen for the project.

Finger-Jointed Strip — A number of random-length strip segments joined together at the manufacturing plant to form a consistent length board. The most common thickness specified is $^{25}/_{32}$", but $^{33}/_{32}$" thick finger-jointed strip flooring is also available. This surface material is also installed like a horizontal brick wall, with each consistent-length board being overlapped with adjacent boards and fastened into the subfloor with cleats, staples or steel clips, depending on the subfloor chosen for the project.

Parquet — Hard maple parquet flooring is manufactured in square and rectangular panels in a variety of dimensions. Individual picket widths range from $^7/_8$" to 1$^1/_8$", and picket lengths range from 5 $^1/_2$" to 12". Minimum thickness of MFMA parquet flooring is $^5/_{16}$". Individual pickets, assembled into panels, are either joined together by wire, mesh, or tape on the back of the panel, or paperface on the front (or surface) of the panel. Parquet flooring is typically installed directly to the concrete substrate using adhesive/mastic, or over subfloor systems that contain continuous subfloors (plywood or similar).

SAMPLE SPECIFICATIONS FOR MAPLE FLOORING

Random Length Strip flooring is the surface material most frequently specified for sports flooring applications. When writing the specification for Random Length strip flooring, specify as "MFMA –RL (Random Length) strip flooring," and list the required species, grade, and thickness. A typical specification should appear as follows:

2.1 Materials

A. Flooring shall be MFMA–RL (Random Length) Northern Hard Maple, $^{25}/_{32}$" thick x 2$^1/_4$" wide, Second and Better Grade; T & G and EM; grade marked and stamped as produced by an MFMA member manufacturer.

Finger Jointed strip flooring is specified in a similar manner as Random Length strip flooring. For example, when ordering Finger Jointed strip flooring, specify as "MFMA–FJ (Finger Jointed) strip flooring," and list the required species, grade, and thickness. A typical specification should appear as follows:

2.1 Materials

B. Flooring shall be MFMA–FJ (Finger Jointed) Northern Hard Maple, $^{25}/_{32}$" thick x 2$^1/_4$" wide, Second and Better Grade; T & G and EM; grade marked and stamped as produced by an MFMA member manufacturer.

Parquet flooring is specified in a similar manner as Random Length Strip flooring. For example, when ordering MFMA Parquet flooring, specify as "MFMA–PQ (Parquet) flooring," and list the required species, grade, thickness and picket size. A typical specification should appear as follows:

2.1 Materials

A. Flooring shall be MFMA–PQ (Parquet) Northern Hard Maple, $^5/_{16}$" thick, Second and Better Grade; fastened together in panels using mesh, tape or wire backing or paper facing; grade marked and stamped as produced by an MFMA member manufacturer. ■

ABOUT THE MAPLE FLOORING MANUFACTURERS ASSOCIATION (MFMA)

The Maple Flooring Manufacturers Association (MFMA) is the authoritative source of technical and general information about maple flooring and related sports flooring systems. MFMA's membership consists of manufacturers, installation contractors, distributors and allied product manufacturers who subscribe to established quality guidelines. Through cooperative member programs, MFMA establishes product quality, performance and installation guidelines; educates end users about safety, performance and maintenance issues; and promotes the use of northern hard maple (Acer saccharum), yellow birch (Betula alleghaniensis) and beech (Fagus grandifolia) flooring products worldwide. To contact the association: MFMA, 60 Revere Dr., Suite 500, Northbrook, IL., 60062. U.S.A. Phone 847-480-9138. Fax 847-480-9282. Website www.maplefloor.org. Email mfma@maplefloor.org.

LEARNING OBJECTIVES:

After reading this section and answering the self-test questions at the end, architects will be able to:

- Describe the various categories of wood sports flooring system subfloor configurations
- Describe the various types of wood sports flooring surface materials
- Cite the most critical specification considerations when designing athletic facility floors

Refer to the learning objectives above. Complete the questions below. Then turn the page upside down and check your answers. Fill out the self-report form on page 382 and submit it or use the Continuing Education self-report form on *Record's* Web site, www.architecturalrecord.com, to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS:

1. What makes northern hard maple a better choice than synthetic material for sports flooring?

2. What are the surface configurations available in maple flooring?

3. When writing a specification, what information should be included?

4. What are the differences between the three basic subflooring systems?

5. What performance characteristics are important considerations in selecting a floor system?

ANSWERS:

1. Wood athletic floor systems are less expensive to maintain and last considerably longer than synthetic floors. Hardwoods such as maple are a renewable resource, with more timber added to the forests each year than is harvested. Wood takes no energy to produce, little energy to process, and it is biodegradable and re-usable. Maple floors have a natural shock-absorbing quality so they can meet performance and safety requirements for a variety of sporting applications.

2. Maple flooring comes in three basic surface configurations: random-length strip, finger-jointed strip, and parquet. The most common is random-length strip.These strips are laid side by side while their ends do not line up, much like bricks where the joint of one falls on the middle of the adjacent piece. Finger-jointed strip joins several random-length strip segments together to form a board of consistent length. These are also laid side by side with the ends offset from each other. Both random-length and finger-jointed strip can be fastened to a subfloor with staples, clips or cleats. Parquet flooring is manufactured by joining individual pickets of wood with mesh or tape into square or rectangular panels. Parquet is typically glued down to the flooring substrate.

3. When writing a specification for maple flooring specify MFMA and list the required species, grade, and thickness. The grade will be marked and the wood will be stamped as produced by an MFMA member manufacturer. For parquet flooring the picket size should also be specified.

4. There are three basic subfloor systems: floating, fixed, and anchored resilient. Floating systems are not mechanically fastened to the concrete substrate. Fixed sytems are mechanically fastened to the concrete slab by pins, screws, or adhesive. Anchored resilient systems are mechanically fastened to the concrete substrate, but have a combination of components that allow varying degrees of additional resiliency within the subfloor system.

5. The important performance characteristics for athletic floors are shock absorption, deflection, ball bounce, surface friction, rolling load, and compression strength. The shock absorption amount prescribed varies for different sports. Concrete floors provide little or no force reduction for an athlete while maple flooring systems absorb much of the impact or shock. Deflection measures the movement of the floor created by an impact. The area of acceptable deflection is determined by the congestion of athletes on the floor. Ball bounce is the measurement of a basketball's rebound height off the floor. Surface friction measures the floor's ability to control the sliding of athletes on its surface. It is a direct function of the finish on the floor. Rolling load is a characteristic of equipment and furniture to potentially damage a floor system when they are rolled across it. Compresssion strength is a measurement of the force needed to crush the floor.

M F M A
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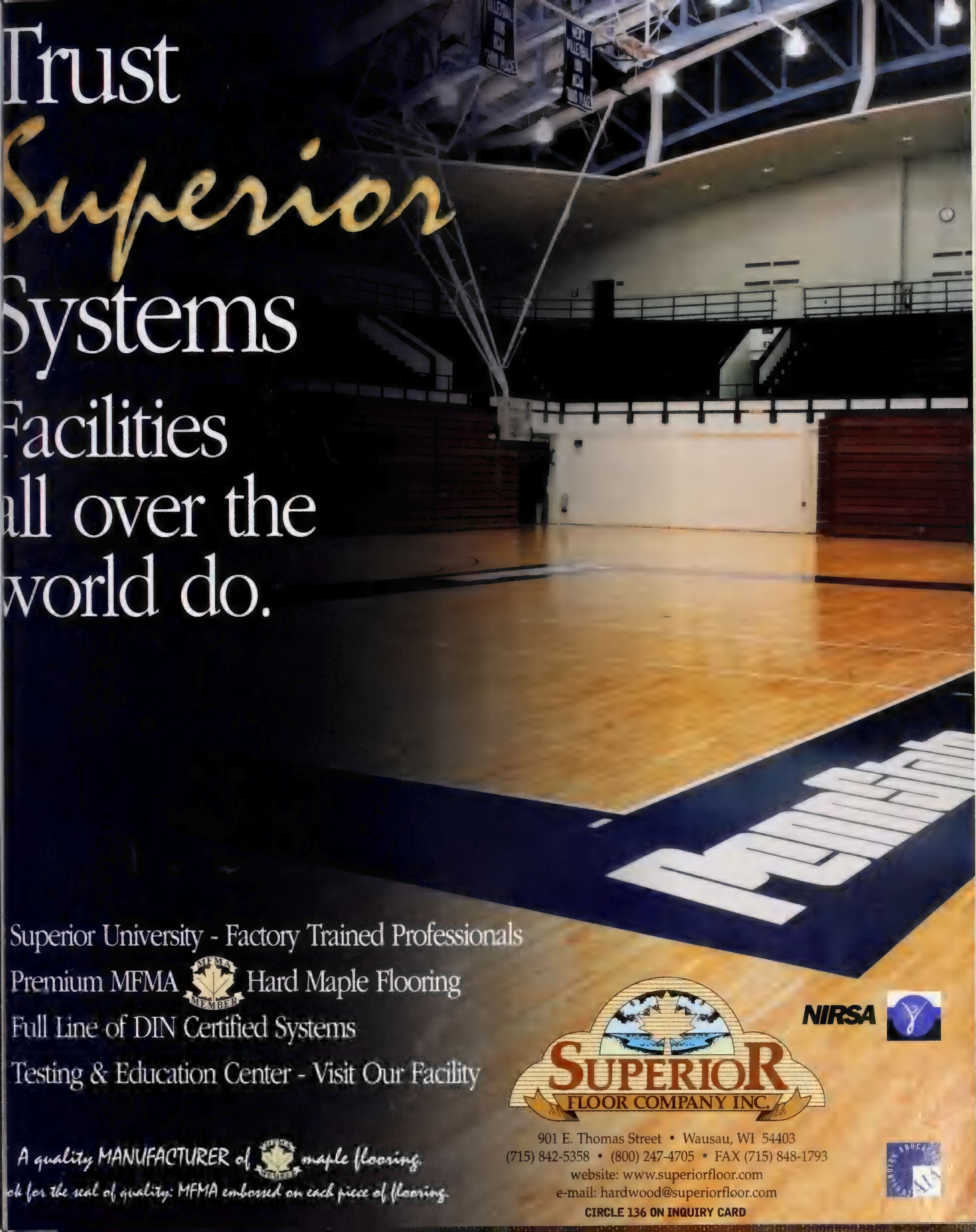

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THE WINDOW AND DOOR MANUFACTURERS ASSOCIATION PRESENTS

POSITIVE PRESSURE RIPPLES THROUGH THE DOOR INDUSTRY

After a decade of heated debate, positive pressure testing fire testing is a reality. It is projected that by 2003 most state and local building codes will mandate positive pressure testing versus the traditional neutral testing methods. Yet, controversy still surrounds the issue, because the transition from the former way of testing fire doors has widespread implications for architects, specifiers, manufacturers, and code officials. At issue are the exact specifications required, how manufacturers anticipate fire door products will change, and how specifiers can be assured of product compliance.

Yet, the situation is even more complicated, due to the current debate over the consolidation of building codes in this country. As the transition continues, debate in the code community does too, over requirements for testing, certification, labeling, and installation, all of which can affect the ultimate design of fire doors.

AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION SERIES

Use the learning objects below to focus your study as you read *Positive Pressure Ripples Through the Door Industry.* **To earn one AIA/CES learning Unit including one hour of health safety welfare credit,** answer the questions on page 296 and follow the reporting instructions on page 382. Or use the Continuing Education self-report form on *Record's* Web site — www.architecturalrecord.

LEARNING OBJECTIVES:

- Explain why positive pressure fire testing is being adopted by local building codes.
- Describe the differences between traditional fire testing and positive pressure fire testing.
- Discuss the expected changes in door and window assembly construction.

The Window and Door Manufacturers Association (WDMA) recognizes the complicity of compliance with the new code requirements and has issued the *Technical Bulletin: Positive Pressure Fire Doors.* This document guides architects, specifiers, code officials, and manufacturers through the new language surrounding positive pressure. In addition, WDMA continues to be an excellent resource for technical information on all aspects of the door and window industry.

Adoption of Positive Pressure Codes

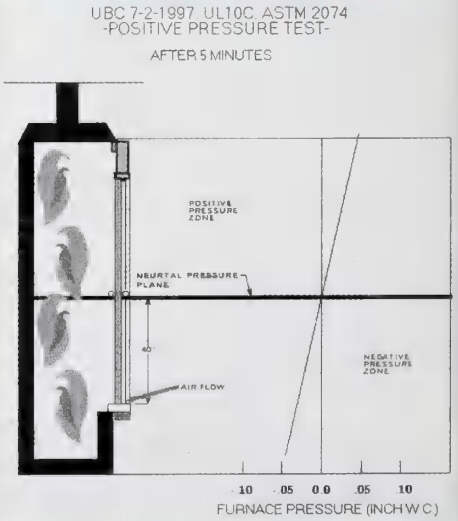
First, some background. For more than a decade, there has been a consistent call from some fire protection experts to revise the fire door test standards, requiring them to be conducted with positive pressure. The most notable advocate of this change was John G. (Gus) Degenkolb, a fire safety consultant based in Carson City, Nevada, who was the chairman of the National Fire Protection Association's NFPA8 80, Standard for Fire Doors and Fire Windows.

Degenkolb, and others, argued that positive pressure represents a better simulation of the conditions that occur in real fires in real buildings than the traditional negative or "neutral" pressure fire test. At the same time, the positive pressure test is practiced internationally through such codes as ISO 3008, BS 476, and JIS A 1311.

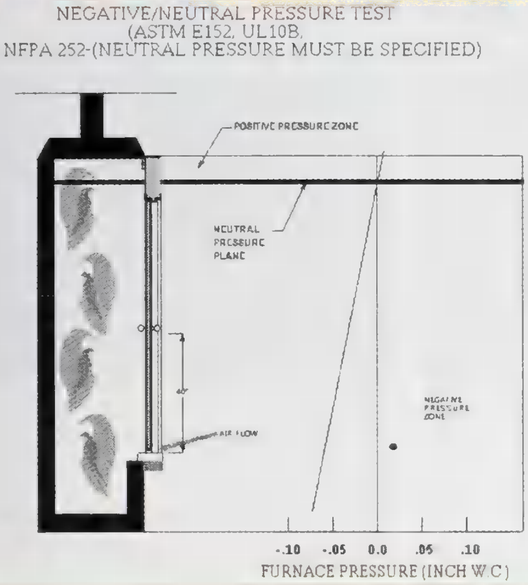
Basically, during a fire test, pressure is developed in a furnace. Positive pressure forces air out of the furnace. Negative pressure acts to pull air into the furnace.

In traditional fire door and window tests, the furnace pressure at the top of the assembly is maintained slightly negative relative to the ambient environment. This means that cool ambient air will tend to be drawn into the furnace through any cracks or openings. This keeps some areas cooler than they might otherwise get or it may cause combustibles to burn faster due to an increase in air supply.

The positive pressure test requires that the "neutral pressure plane" be established at 40 inches above the sill for door assemblies and 2/3s down from the top of window assemblies within the first five minutes of the test. This causes a positive pressure to be created above these locations. There will still be negative pressure below these points, but the magnitude of the pressure difference will be smaller and, thus, any airflow into the furnace at the bottom of the assembly will be less than in neutral pressure tests.



Positive Pressure Fire Chamber



Negative Pressure Fire Chamber

More importantly, hot furnace gases will be pushed out through any cracks or openings in the assembly located above the neutral pressure plane. This could result in failures. Wood-edged doors may have the wood burn along the edges to the outside face, causing flaming on the exposed face, constituting failure. Wood frames may do the same. Gases evolved from door cores may also ignite and burn like gas torches on the unexposed face of the assembly.

In this country, positive pressure testing methods were developed and adopted into Volume 3, Standard 7-2 of the Uniform Building Code (UBC) in 1977. In addition to "flaming criteria," part one of the UBC positive pressure test includes a "cotton pad ignition test" to evaluate the passage of hot gas through the assembly. The cotton pad test, which applies only to temperature rise rated doors, uses a swatch of cotton gauze is held an inch from any suspected hot gas leakage points. If the cotton ignites in 20 seconds or less, the assembly fails.

Part Two of the 1997 UBC 7-2 code concerns the smoke and draft control assemblies. This test requires measurement of the air leakage rate through the assembly at both ambient (i.e. room temperature) and elevated (400 degree F) temperatures. The test procedure requires leakage measurements at pressures of 0.05, 0.1, 0.2, and 0.3 inches water column at both 75 degrees F and 400 degrees F; a total of eight measurements. Acceptable performance is defined as less than or equal to 3 cubic feet of air per minute per square foot of assembly area at 0.10 inch water column pressure. Assemblies qualifying under this standard will include an "S" designation on the fire-rating label.

The group responsible for the UBC document (ICBO-International Conference of Building Officials) was the first agency in the United States to include and adopt positive pressure fire door testing. During the development of the 1997 version of the UBC, debate ensued on a couple of topics (as it had for the entire decade).

The first was challenging the need for the change to positive pressure in the test method. Current neutral pressure-tested fire door assemblies had performed nearly flawless for many, many years. The argument being, that if something is working, why fix it? Secondly, if we were going to become like the rest of the world and change to positive pressure testing, we needed to drop the hose stream portion of the neutral pressure test. This is where a fire door assembly is subjected to the cooling, erosion, and impact of a fire hose stream of water, for a specified duration immediately after the fire endurance portion of the test. If the combination of the positive pressure fire test and the hose stream test were included in the code (which it eventually was), it would make the new test method the most difficult to pass in the world.

Meanwhile, the International Building Code been written, also requiring testing under positive pressure conditions. Where ICBO wrote its own test standard, the IBC adopted a heretofore neutral pressure test standard, NFPA 252, and converted it for positive pressure use through code language. By 2003, most of the states in this country are expected to be using some version of the new IBC, which may replace the 1997 UBC.

The use of positive pressure testing in Europe and elsewhere has lead to the manufacture of fire doors that incorporate "intumescent" seals. Intumescents are special components that have the ability to swell or foam when exposed to high temperatures and are an effective method of preventing hot gases from leaking. These materials are incorporated into the edges of the doors, frames, or in applied gasketing systems. *(See photo below.)*

Intumescent Seals

Repercussions on Manufacturers

Manufacturers, specifiers, and architects have been uncertain as to the how the change in the code would affect the manufacturing of fire doors. Would all fire doors and windows need to be retested? Would existing designs pass the revised test? How soon would these products be needed on the market? How would building officials, architects, specifiers, and builders know which products, or systems comply with the new requirements?

As the codes are being implemented over time, the transition can be difficult rough. Here is how products are expected to change.

- **WOOD DOORS:** The challenge of re-engineering wood doors to meet the requirements of positive pressure is to protect against excessive charring and flaming along the edges and at the top where positive pressure will force 1,700 degree F smoke and gases from the furnace through the test assembly. Also, any penetration of hardware or vision lites that occur 40 inches or above on the door require re-evaluation.

Wood door manufacturers are taking two remedial approaches to this problem. One is reinforcing the edges and top rail of the door with higher density material. The other approach involves intumescent seals—special materials designed to swell under fire conditions and seal off the passage of hot smoke and gases through openings in door assemblies. For perimeter protection, these intumescents can be hidden under the door edge, hidden in the smoke gasket, or surface applied to either the door edge or the frame rabbet. All of these applications are currently available. Contact the door manufacturer to determine their individual labeling abilities, or review the labeling agency's most recent listings.

- **STEEL DOORS:** The polyurethane foam-filled door is likely to become a casualty of positive pressure. In its product design, liquid polyurethane is injected into the interior cavity of the door where it expands, hardens, and forms the door core. Under positive pressure test conditions, this type of door vents an amount of smoke that exceeds the standard as well as experiencing flaming.
- **HARDWARE:** The effect on hardware depends on the amount and type of combustible plastic used, along with the location of the hardware on the door. Modifications may need to be made to concealed vertical rod devices, electronic locks, components such as solenoids, and NiCad batteries. Manufacturers have also had to address special problems for surface-mounted closers located at the top of the door where test conditions are most severe. In some cases, re-engineering of seals and hydraulic fluids has been necessary to eliminate the possibility of bursting and ignition during the test.
- **DOOR FRAMES (WOOD AND METAL):** Most three-sided metal door frames and anchors have not been affected by positive pressure. Wood and wood veneered door frames are also available in positive pressure assemblies. Contact the manufacturer for details. If intumescents are required for a fire door installed in a standard metal three-sided door frame, the intumescent requirement must be identified in the fire procedure listing for the door. If a special frame design is used that includes a built-in intumescent, the frame will require positive testing and compliance.
- **DOOR ACCESSORIES (GASKETING, LIGHT KITS, GLAZING, ETC.):** Fire window frames and transom sidelite frames are not required at this time to have a positive pressure label or identification. Glass also is not currently required to have a specific positive pressure identification at this time. However, similar to a vision lit kit, there are special glazing "systems" that have been tested to positive pressure requirements. Supplemental labels and/or instructions will identify individual components that are needed for assembly. Transom and side panels will require certification and identification for positive pressure.

Some manufacturers are offering a tested and labeled "assembly" that would be inclusive of the fire door, frame, and hardware that have been successfully testes as an assembly, in lieu of components separately tested by different manufacturers.

Certification and Labeling

Specifiers and architects need to find products that bear the label indicating compliance with UBC 7-2 1997 or UL 10C. In its *Technical Bulletin: Positive Pressure Fire Doors,* WDMA suggests the following important facts when considering specifications.

KEY PHRASES INDICATING POSITIVE PRESSURE:

- UBC 7-2-1997 – UBC Fire Test
- IBC 2000 – Code
- UL 10C – Fire Test
- ASTM 2074-00 – Fire Test
- After 5 minutes into the test the neutral pressure plane should be at 40 inches.
- Shall meet positive pressure requirements.
- Intumescent seals – not telling you it is positive pressure but implying that it is.

KEY PHRASES INDICATING NEGATIVE (NEUTRAL) PRESSURE:

- UL 10B – Fire Test
- UBC 7-2-1994 – UBC Fire Test
- UBC 43-2- UBC Fire Test
- Tested at atmospheric pressure
- Neutral pressure
- Negative pressure
- ASTM E-152 – Test Method

PHRASES THAT DON'T TELL YOU IF IT IS POSITIVE OR NEGATIVE

- NFPA 101 – Life Safety Code
- NFPA 105 – Smoke and Draft Control Document
- NFPA 252 – Fire Test method that gives the option to be positive or negative
- UBC – with no date given could be either positive or negative
- UL 1784 00 Air Leakage Test for Door Assemblies
- NFPA 80 – INSTALLATION STANDARD FOR FIRE DOORS AND WINDOWS.

While labels are not required to state which test method was used, such information can be useful to the specifier. In addition, installation instructions can ensure that proper materials are installed and used correctly. If the components for fire-rated openings are not supplied as an "assembly" from a sole manufacturer, the installation instructions become the "bible" for the authority having jurisdiction to verify compliance of all components working together to achieve the desired rating.

By 2003, most state and local building codes will mandate positive pressure testing of fire doors versus the traditional neutral testing methods. As described here, the *WDMA's Technical Bulletin: Positive Pressure Fire* Doors guides architects, specifiers, code officials, and manufacturers through the new code requirements.

SEQUENCE OF FIRE DOOR TESTS

Fire test assembly showing thermocouple pads for measuring temperature rise.

The unexposed face of the door assembly after 1 1/2 hours and prior to the hose stream test.

The exposed face of the doors after fire, before hose stream test.

Methods of Compliance

The change to positive pressure will be confusing. Specific compliance categories have been established as a shorthand way to analyze components and applications and to help guide the implementation of the new codes.

Positive pressure openings can be accomplished in two basic ways:

- **CATEGORY "A" DOORS: DOORS WITH NO ADDITIONAL EDGE-SEALING SYSTEM REQUIRED.** This category includes doors evaluated without any intumescent on either the frame or the door. It also includes doors evaluated with intumescent incorporated into the edge of the door by the manufacturer or the licensed machiner. This category includes most hollow metal doors; wood/composite doors with built-in edge seals; and some traditional doors with size and swing limitations.
- **CATEGORY "B" DOORS: DOORS WITH ADDITIONAL EDGE-SEALING SYSTEM REQUIRED.** This category includes doors evaluated with intumescent applied on the frame—either surface applied or "built-in."

In addition, if an opening requires an "S" label it will generally need to have Smoke and Draft Control Gasketing, described in listing category "H." This category includes gasket systems that are surface-applied (such as kerf applied, adhesive backed or mechanically attached) to frames and doors. It also includes gasketing for the meeting edges of doors used in pair and double egress assemblies. This category covers gasket systems that have been evaluated for use in positive pressure rated assemblies but do not provide an edge-sealing system to the opening as described below.

Category "G," edge-sealing systems, includes intumescent-type systems that are surface applied (such as kerf applied for use with compatible frames, adhesive backed for application to frames or mechanically attached) to frames or doors. It includes seals for meeting edges for doors in pair and double egress assemblies.

Other categories include proprietary frames (Category C), assemblies (D), hardware (E), light kits (F), and gaskets (J).

These terms will become more familiar as the labeling of positive pressure fire door assemblies becomes more commonplace. For a listing of the different types of flush door constructions fire-rated for positive pressure openings, see section G-l of the WDMA I.S. 1A Quality Standard, latest edition. Stile and Rail doors as described by WMDA I.S. 6A Quality Standard, latest edition are also available for positive pressure openings based on specific manufacturer's approval.

All in all, the manufacturers of the components listed in this article have adapted nicely to the change in the fire door test methods. Contact a WDMA member company to learn more about individual manufacturer's products and capabilities. Also, the WDMA is a source for answers regarding this topic. The organization will contact members and get answers to your questions in a very timely fashion.

WDMA – THE WINDOW AND DOOR MANUFACTURERS ASSOCIATION – is a trade association representing approximately 130 U.S. and Canadian manufacturers and suppliers of windows and doors for the domestic and export markets. Formerly the National Wood Window and Door Association, the organization is comprised of the country's leading producers of sash, frames, window units, skylights, flush doors, stile and rail doors, and sliding and swinging patio door units. In addition, a Council of Supplier Members represents the producers of glass, lumber, hardware, sealants, preservatives, weather-stripping, extrusions, and the numerous other materials required to manufacture the industry's products. WDMA members manufacture high performance products designed and built to performance-based standards. In addition WDMA provides how-to-guides and technical information to architects and specifiers, such as the *WDMA Technical Bulletin: Positive Pressure Fire Doors.* The article that appears here is based on that bulletin, as well as information from industry experts David San Paolo (The Maiman Co.), Rick Curkett, P.E. (Intertek Testing Services), Nelson Kraschel (CURRIES), and Tom Janicak (Ceco Door Products).

LEARNING OBJECTIVES:

- Explain why positive pressure fire testing is being adopted by local building codes.
- Describe the differences between traditional fire testing and positive pressure fire testing.
- Discuss the expected changes in door and window assembly construction.

INSTRUCTIONS:

Refer to the learning objectives above. Complete the questions below. Then turn the page upside down and check your answers. Fill out the self report form on page 382 and submit it or use the Continuing Education self report form on ***Record's*** web site - www.architecturalrecord.com - to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS:

1. Why is positive pressure fire testing being adopted?

2. What is the difference between traditional fire testing and positive pressure fire testing?

3. What was the result of the use of positive pressure testing in Europe?

4. What is being done to help manufacturers comply with positive pressure testing?

5. How will door assemblies be redesigned to pass positive pressure testing?

ANSWERS:

1. Although positive pressure testing has been a debated topic for several years, it is finally scheduled to be adopted by most states by 2003. This will occur as the states adopt the new International Building Code as their standard replacing the 1997 UBC. Positive pressure fire testing is recommended for two reasons. First, it simulates the conditioins of a fire more realistically than traditional testing. Second, positive pressure testing is the standard for international codes.

2. In traditional fire door and window testing the furnace pressure at the top is slightly negative, drawing cooler air in through any cracks or openings. This may keep some areas cooler and may cause combustible items to burn faster due to an increased air supply. In positive pressure testing a neutral plane is established at mid height, causing positive pressure above that height. This causes hot gases to be pushed out at the top through any cracks or openings, resulting in burning or failures on the outside edges of door assemblies.

3. The use of positive pressure testing in Europe and elsewhere led to the manufacture of fire doors to incorporate "intumescent" seals. The intumescent seals swell or foam when exposed to high temperatures and effectively prevent hot gases from leaking. The materials are incorporated into the edges of doors and frames or are in applied gasketing systems.

4. Compliance categories have been established to help analyze components and applications. The two basic categories are: A Doors with no additional edge-sealing system required, and B Doors with additional edge-sealing system required. There are other categories for proprietary frames, assemblies, hardware, light kits, and gaskets. Also, the WDMA serves as a resource for technical information.

5. Wood door manufacturers are using two approaches at redesigning. One is reinforcing the edges and top rail of the door with higher density material. The other approach involves intumescent seals to prevent smoke and gases from escaping through door assemblies. Some manufacturers are offering a tested and labeled assembly that would include the fire door, frame, and hardware in lieu of components tested separately.

For additional information about the Window and Door Manufacturers Association contact:

WDMA
Window & Door Manufacturers Association

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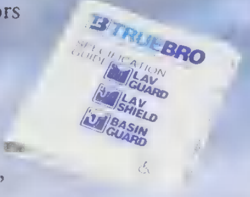

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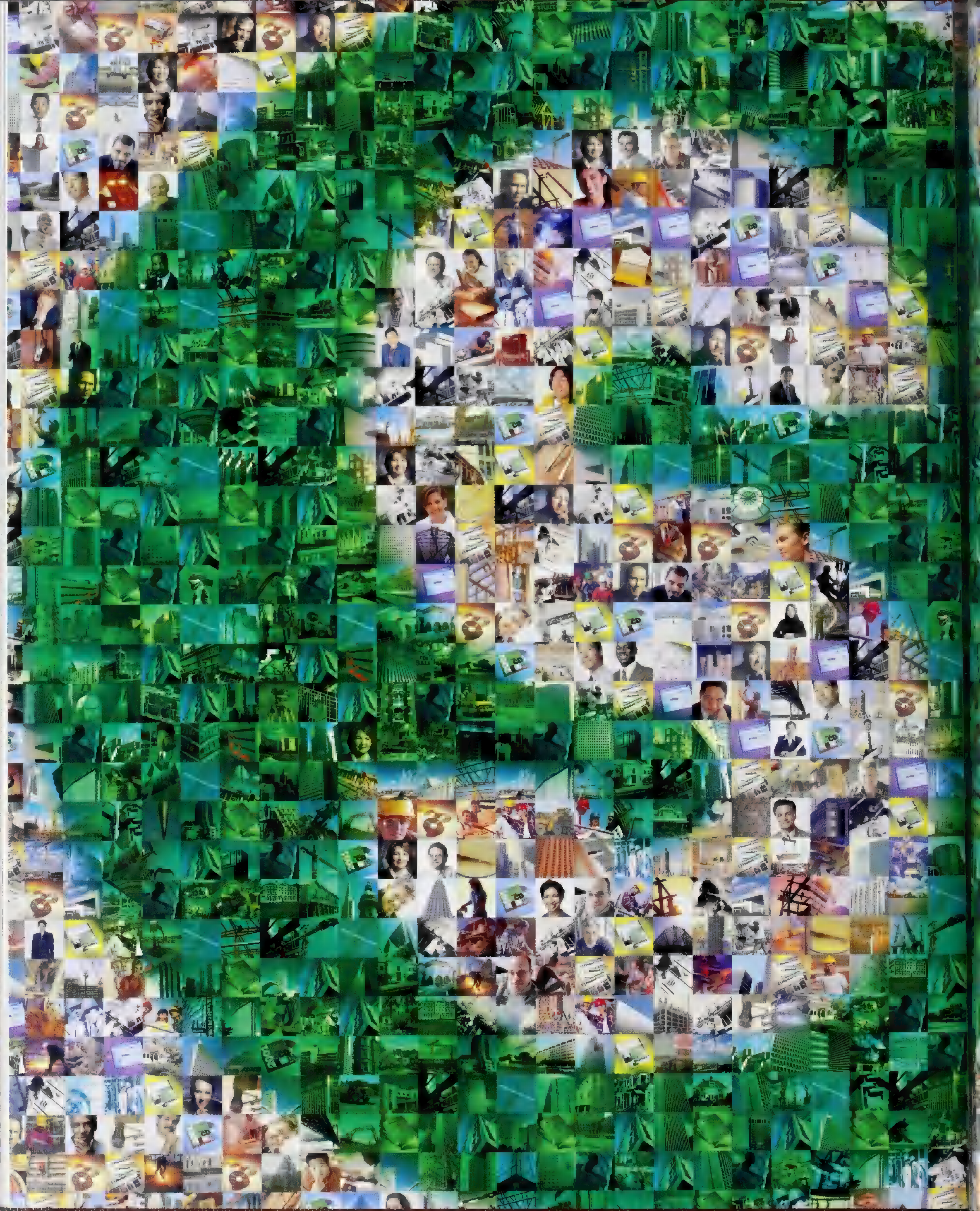

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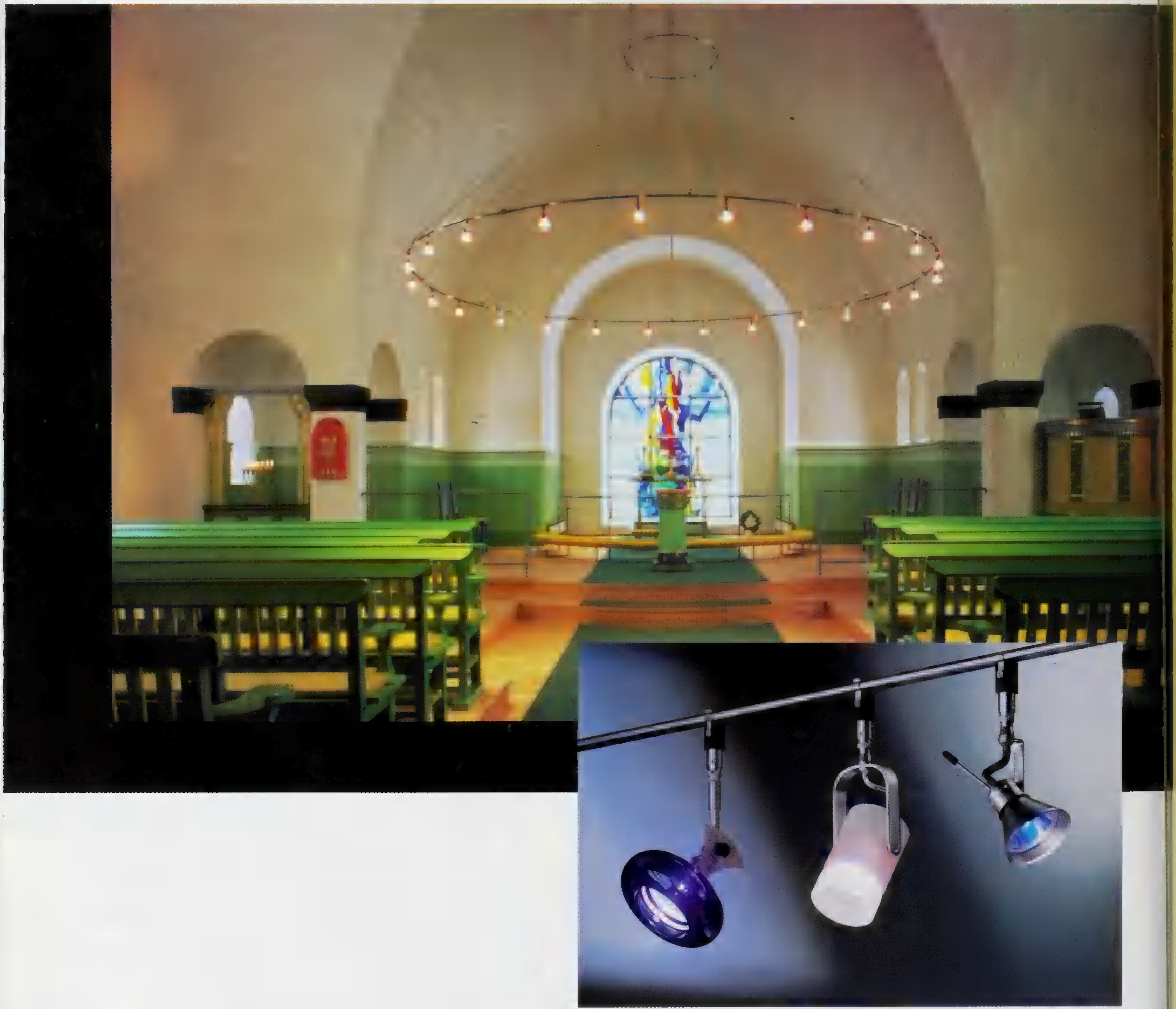

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CIRCLE 141 ON INQUIRY CARD

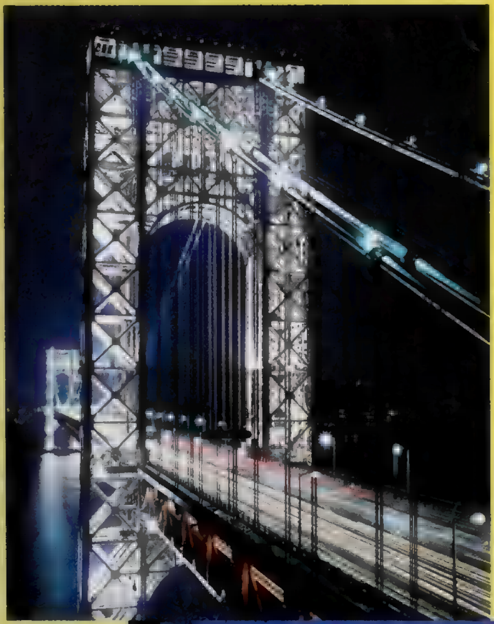
LIGHTING

Sometimes not all that is good can be measured with a watt meter

In February's Lighting section [FEBRUARY 2001, page 175] I wrote of my concern that the current power crises in the West could create a backlash against the kinds of projects that we see profiled in these pages. But most designers are good stewards of the earth's resources—the fossil fuels that power most generating plants. Unfortunately, while it is easy to calculate how much power it takes to operate the kinds of lighting in this section, it is difficult to place a value on its intangible, but real, benefits.

A critic might ask what was accomplished by lighting the George Washington Bridge (1), between New Jersey and upper Manhattan, or the Second Street Bridge (2) in Columbus, Indiana. Besides giving a nighttime presence to the gateways to two important American cities, these lighting projects allow people to experience the achievements of the bridges' designers in a way that would otherwise never be seen. The Port Authority of New York and New Jersey is sensitive enough to the energy issue that they are lighting the George Washington Bridge only on holidays. The total wattage on the Second Street Bridge is low, and there is no need for roadway lighting on the span, which would consume nearly the same amount of power.

The theater at the Whitaker Center (3) in Harrisburg, Pa., is also a place where a naysayer might point to the lighting and cry, "Waste!" But it's a theater. Except for the hours immediately before and after performances, this lighting is rarely on. When it is, its contribution to the experience of spectators can't be quantified. Most people who want to conserve energy have good intentions. And they are right in some cases: There is a lot of bad lighting in the world that is wasteful and doesn't work. But if we are to protect our opportunities to do this kind of work when power is scarce, we must also be able to show that not all worthwhile effects can be measured with a watt meter. *Charles Linn, AIA*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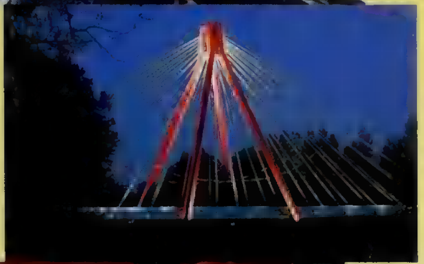
2

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CIRCLE 142 ON INQUIRY CARD

Creative Uses

Illuminating the halls of justice on the West Coast • Backlighting wood and glass benefits a Canadian club • A futuristic model residence is wrapped with the right white light

Judicious lighting institutes an open, friendlier backdrop for true-life episodes of L.A. Law

Not far from the illuminated landscape encircling Los Angeles International Airport, the glowing exterior of a new branch facility of the LA County court system creates its own striking presence in the night sky. And when facing court appearances during daytime hours, citizens might find the transition from bright California sunlight to the sequestered halls of justice less foreboding than if they entered a dark courtroom. Collaborating architects Ellerbe Becket and Mosakowski Lindsey Associates (MLA), aided by the Mintz Lighting Group design consultants, have created a contemporary, public-friendly civic building.

"The county administrators and planners wanted an environment that signaled courthouses have changed from what they were a hundred years ago," says Rey Tuazon, MLA design principal. "They didn't want the courthouse to seem massive, insular, or bunker-style, but instead more welcoming to visitors and the professionals who work here. The lighting design is an extension of that more open policy."

"Of course, citizens come to courthouses to be prosecuted and sentenced, but some people also enter to get licenses and permits or to pay parking tickets," observes principal lighting designer David Mintz. "We didn't want everyone accessing public services to feel as though they were going to jail."

To create less intimidating backdrops for real-life episodes of *L.A. Law,* lighting was carefully integrated within architectural forms and well-detailed materials. The entrance to the 12-story courthouse resembles the look of a high-end commercial office tower, rather than a gateway to the judicial branch. The curving glass facade wraps a two-story lobby gallery lit with metal-halide fixtures that evoke a feeling of openness. The lighting helps to provide a smooth transition from outside to indoors. Italian porcelain-tile flooring is complemented by walls of marble and polished granite, which are accentuated with metal halides. The curved glass wall leads circulation toward an expansive inner lobby, where a 35-foot-high vaulted ceiling further reinforces openness. Fluorescent uplights wash the ceiling to emphasize its height. HID metal-halide downlights provide general illumination, accompanied by metal-halide wall washers and custom fixtures mounted in a staggered arrangement to wash the floor evenly. Compact fluorescent downlights illuminate elevator lobbies.

Within each courtroom, a semicircular judge's bench is angled in a corner to allow for optimum viewing by the attorneys, jury, and public gallery. A makore-wood-clad wall behind the judge's bench is accentuated by linear fluorescent cove lighting, while compact fluorescent fixtures set in soffits highlight fabric-wrapped acoustical panels along side walls. The perimeter lighting helps to compensate for the absence of windows inside the courtrooms and allows low levels of ambient illumination when overhead lighting is lowered during audiovisual presentations.

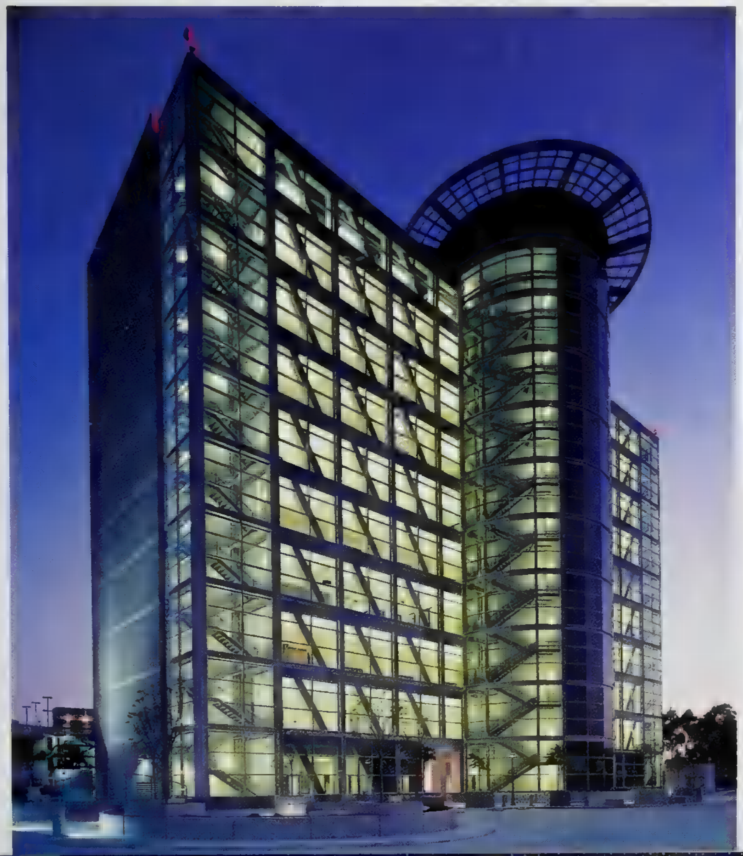
The design team faced the challenge of providing versatile light levels to accommodate daily court activity as well as dimming for a variety of audiovisual needs. Budget limitations, however, overruled installation of a preset dimming system, so the lighting team opted for a cost-effective alternative. "Our solution was to install compact fluorescent downlights with lamps that are individually ballasted and circuited for individual switching," explains associate principal lighting designer Kenneth Douglas.

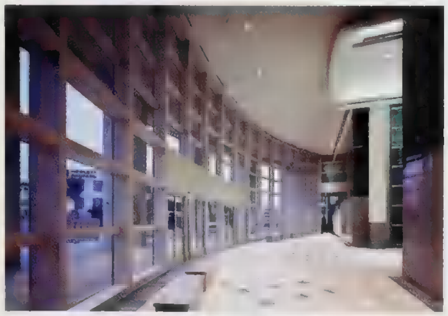
At the request of the design architect, recessed compact fluorescent fixtures were installed at ceiling panel intersections within the courtrooms to leave the curved ceiling sections free of additional perforations. Judges' chambers feature compact fluorescents.

Direct/indirect linear fluorescents illuminate hallways, which offer views outdoors via the glass curtain wall. "There is always a high level of tension and emotion in courtrooms," explains Mintz. "When people take a break from these courtrooms, it is a nice feature to have a bright, open space to walk in."

Set on time-clock controls, the direct/indirect linear fluorescents keep the facade of the courthouse shining as a civic symbol during off-hours.

Leanne B. French





The facade glows from within (left). Corridors feature daylight and views (top). Compact fluorescents light courtrooms (above).

A translucent bar and overhead light box generate ambient illumination at Bamboo

Calgary, Canada, might not seem like an obvious locale for a Polynesian tiki bar, but Bamboo accomplishes the latitude adjustment with "surf's up" playfulness. Designed by McKinley Dang Burkart, the 2,000-square-foot nightspot caters to a young clientele of clubgoers and lounge lizards lining up for Bora Bora punch served in coconut shells topped with dry-ice fog.

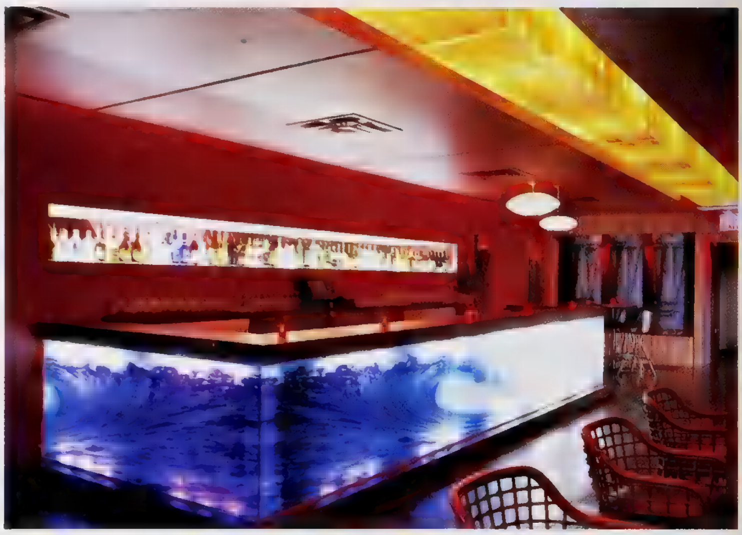
When creating an energetic backdrop for the cocktail crowd, principal designer Walker McKinley says he wanted to evoke a retro, South Seas look "without crashing into a wall of kitsch. The bar was conceived as an abstracted version of a Westernized tiki lounge from the 1970s. We wanted to create appropriate imagery in broad strokes, interior elements that could be appreciated even when the bar is packed with patrons standing shoulder-to-shoulder."

McKinley and project designer Tony Leong wrapped the space with natural finishes—a maple floor, zebra-wood paneling with bamboo inserts, and a back bar featuring a wenge wood top. Bringing the room to life is ambient lighting that stretches out in several directions.

"The client, Victor Choy, of the Concorde Group, wanted the lighting levels to remain relatively low," McKinley says, "but we needed to create enough ambient illumination so that patrons won't feel closed in when the room fills up. We created three main threads of light that run the length of the room along different planes."

A crashing blue wave rolls across the front of the bar. Silkscreened onto glass panels, the image is backlit by linear fluorescents. Behind the bar, additional fluorescents light bottles set along glass shelves within a rectangular niche, which is backed by mirrors.

Overhead, a 25-foot-long decorative rafter is constructed of Lucite sheathed in a thin pine veneer. Dimmed incandescents backlight the wood grain to create a warm glow. "The light box is suspended from a slot in the ceiling so it appears to float above the bar," McKinley says. Two vintage pendants, Modernist classics designed by George Nelson, are focal points at one end of the bar. Inset along an adjacent wall, three Polynesian totems—fiberglass set pieces—are backlit by red-gelled incandescents. *William Weathersby, Jr.*



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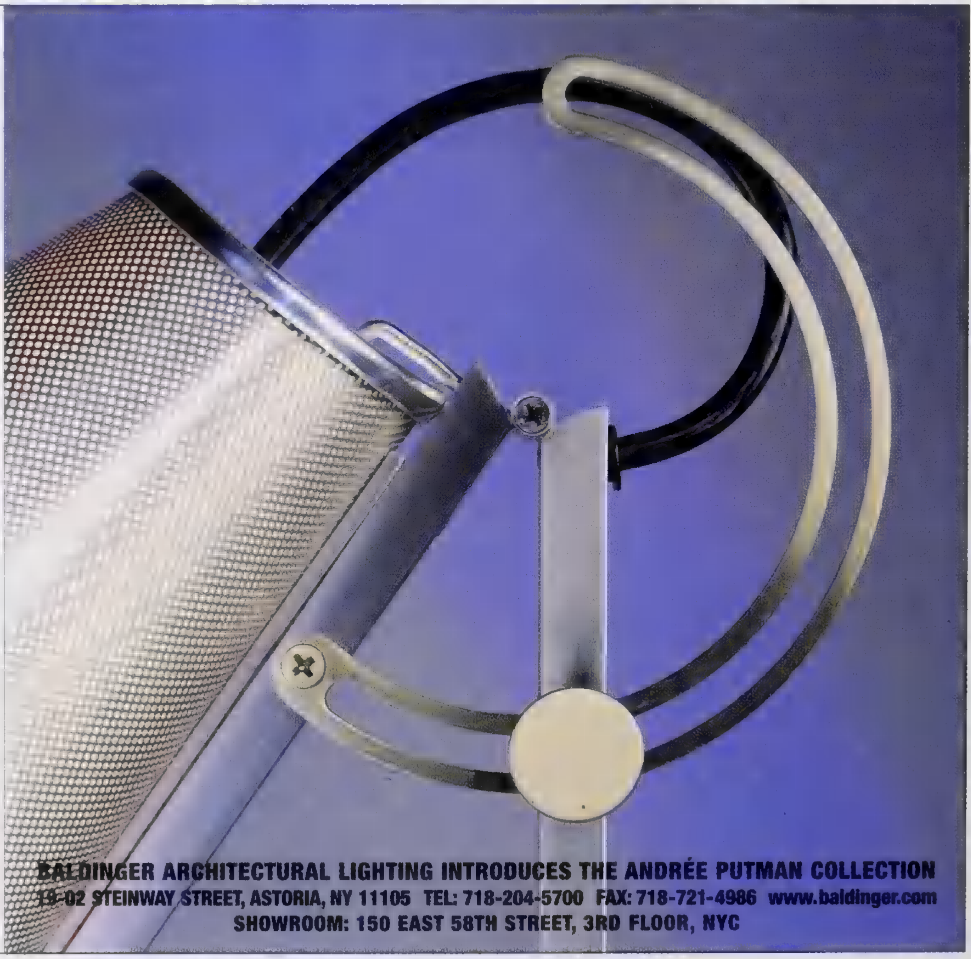

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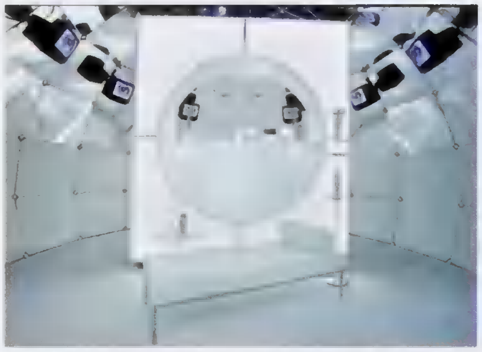
CIRCLE 355 ON INQUIRY CARD

A design show forecasts fluorescents for future space pods



Fluorescents and halogens bathe a futuristic abode at a Toronto design show (above and right).

Though it's already 2001, few of us are booking our own space odyssey just yet. One vision of a future homestead in space or on terra firma opts for a hermetic capsule bathed in white light. Invited by Toronto's Interior Design Show to create a 600-square-foot space-age living environment, II By IV Design Associates devised a geodesic-domed pod enclosing a luminous white-on-white interior. Prefabricated polyester-resin modules were plugged into the dome frame to accommodate bathing, sleeping, dining, and built-in storage units. "It was a playful way to explore new ways of thinking about design for the hospitality and housing industries—on or off this planet," says design principal Dan Menchions.

The geodesic dome, 20 feet in diameter and 14 feet high, was designed with a lightweight modular frame that could be unfolded from a suitcase and assembled in three hours. A flexible system of plastic-laminate panels was held within the grid with chrome connectors. The lower panels featured a white matte finish, while the upper sections were clad with thin metal-laminate mirrors.

Throughout the space, backlit panels and incandescent spots created a gleaming white envelope. Panels backlit with cool T10 fluorescents illuminated the sleeping, bath, and dining areas. In the sleeping bay, an illuminated arch served as a headboard detail framing a white, round ultrasuede bed, which was flanked by chain-mail pendants housing 75-watt halogen lamps. In the dressing cove, 10-watt Xenon lamps outlined a full-length mirror, while 12 square niches, backlit with T10 fluorescents, served as ambient light fixtures as well as added storage bays. The bath module was illuminated with recessed 35-watt MR16 fixtures, while Foscarini pendant lamps set the mood for dining. Circling the dome, TV monitors provided multimedia and computer connections and added the only hint of pattern or color. It may not fly just yet, but this futuristic abode forecast a lifestyle light-years ahead of our time.

Nayana Currimbhoy

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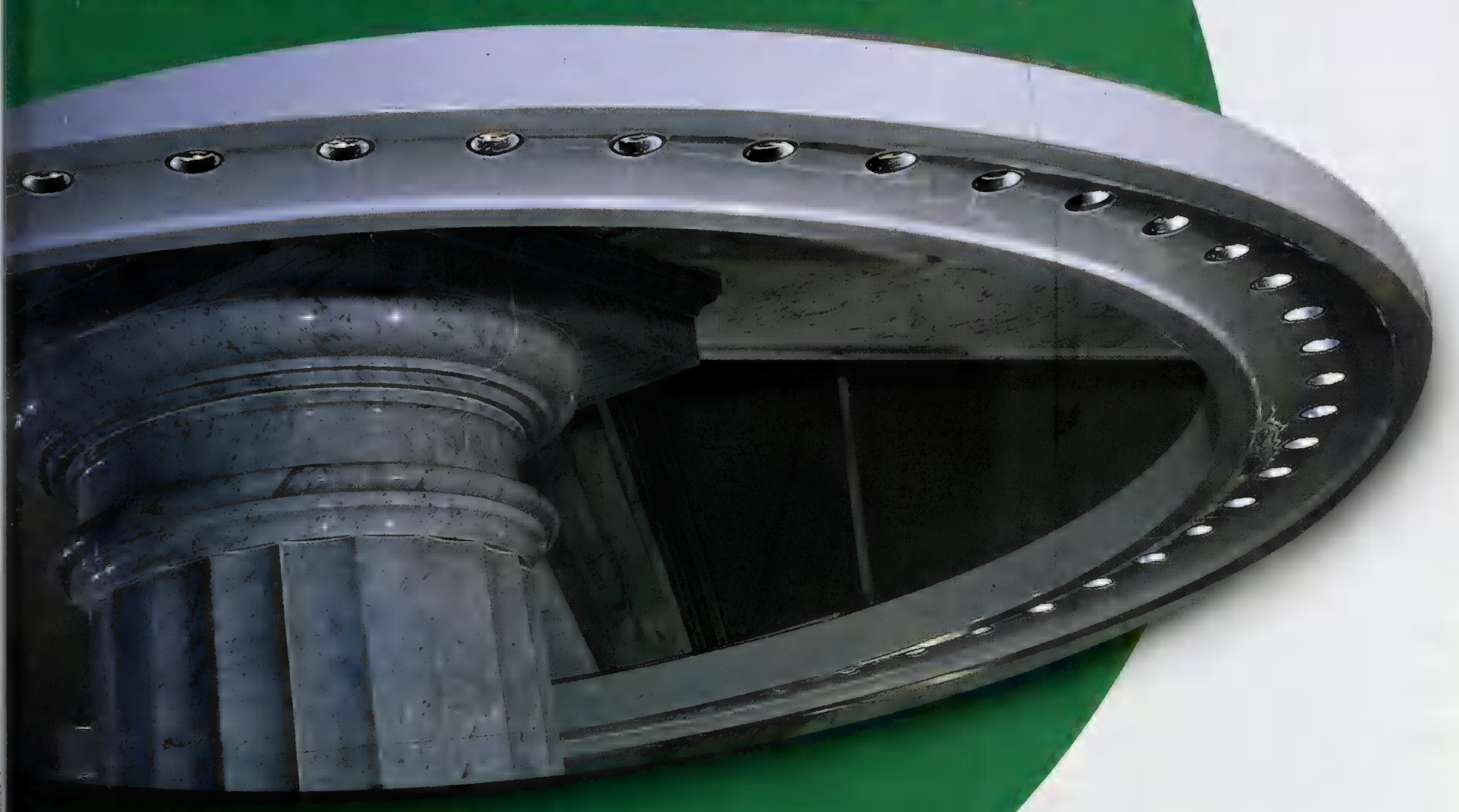
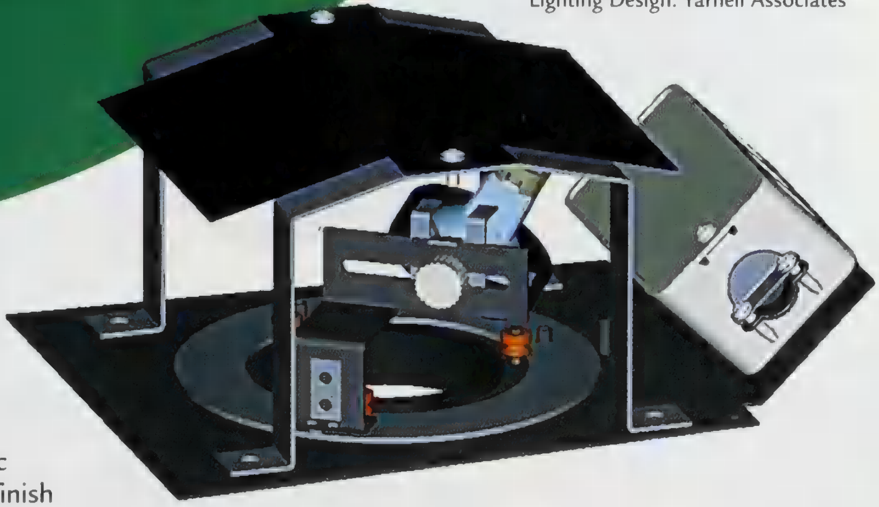
CIRCLE 41 ON INQUIRY CARD

n Innovative Approach to Lighting



Project: Marquette Building, Chicago, IL
Lighting Design: Yarnell Associates



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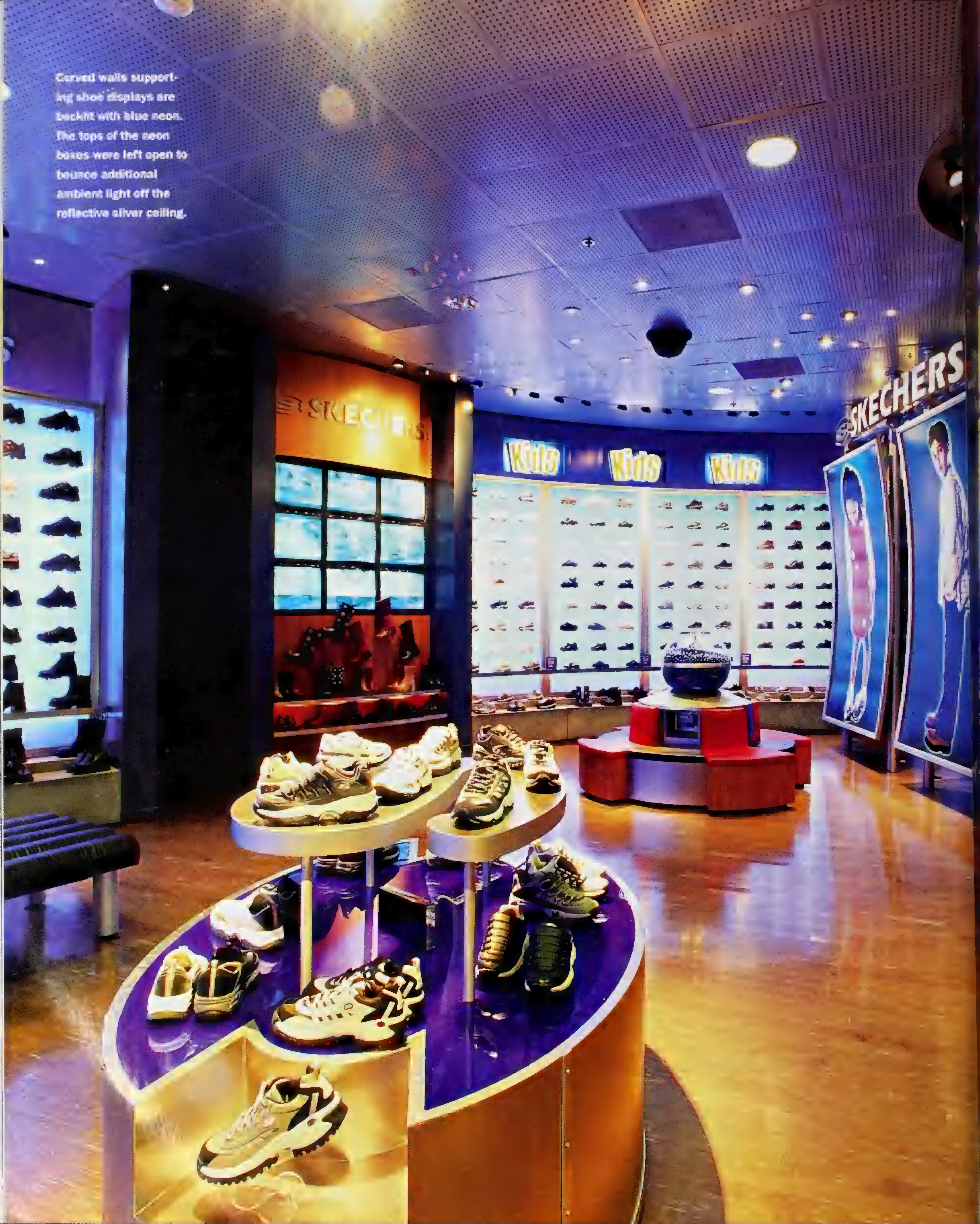

Curved walls supporting shoe displays are backlit with blue neon. The tops of the neon boxes were left open to bounce additional ambient light off the reflective silver ceiling.

A shoe store outpaces the competition with high-contrast accents imparting a youthful glow

By Leanne B. French

High atop a hill in Hollywood, Universal Studios CityWalk is a street of dreams—if you are a die-hard shopper or love the nightlife. With a master plan by Jerde Partnership International, the cacophonous retail and entertainment complex made its debut in 1993. A 1,500-foot-long pedestrian promenade serves as a central spine that connects the three anchors of Universal's vast movie studio complex: an amphitheater, 18-screen cinema, and theme park. The boulevard blends shops, restaurants, bars, nightclubs, and arcades—all housed within a collage of buildings constructed from a fanciful kit of parts. Decorative towers and neon marquees are juxtaposed with colorful walls, layered grids, and playful signage. It's an architecture of compacted, exaggerated forms meant to attract and entertain, with lighting cues leading the way along the street.

Part of a recent expansion to the complex, Skechers USA is a new retail arrival. Rather than try to outshine its competitors with maximum wattage to attract attention, the 2,500-square-foot shoe store puts its best foot forward in a streamlined environment tailored with high-contrast illumination by Lighting Design Alliance (LDA).

Collaborating with MPA Architects and retail designer ME Productions, the lighting design team aimed to underscore Skechers' youthful image by taking what is—considering the frenetic context—a relatively less-is-more approach. "CityWalk is an overt, 'visually loud' area where every retailer is competing with its neighbors for attention," says LDA senior designer Archit Jain. "Most retailers here light their stores brightly to draw customers inside, but we didn't want to blast light out onto the thoroughfare or along every interior plane. Instead, we chose to lure people inside by creating an integrated interior that features a variety of high-contrast illuminated surfaces."

A California-based footwear company known for its casual shoes

Leanne B. French, a freelance writer and editor based in New York City, specializes in architecture and entertainment design.

Project: *Skechers USA, Hollywood, Calif.*
Architect: *MPA Architects*
Retail designer: *ME Productions*
Lighting designer: *Lighting Design Alliance—Chip Israel, IALD, principal; Archit Jain, Frank Feist, designers*

Sources
Adjustable downlights: *Lightolier*
Multihead fixtures: *Translite*
Compact fluorescents: *Wila*
Display fixtures: *Premier*
Track lighting: *Alkco*
Neon: *Promotional Signs*

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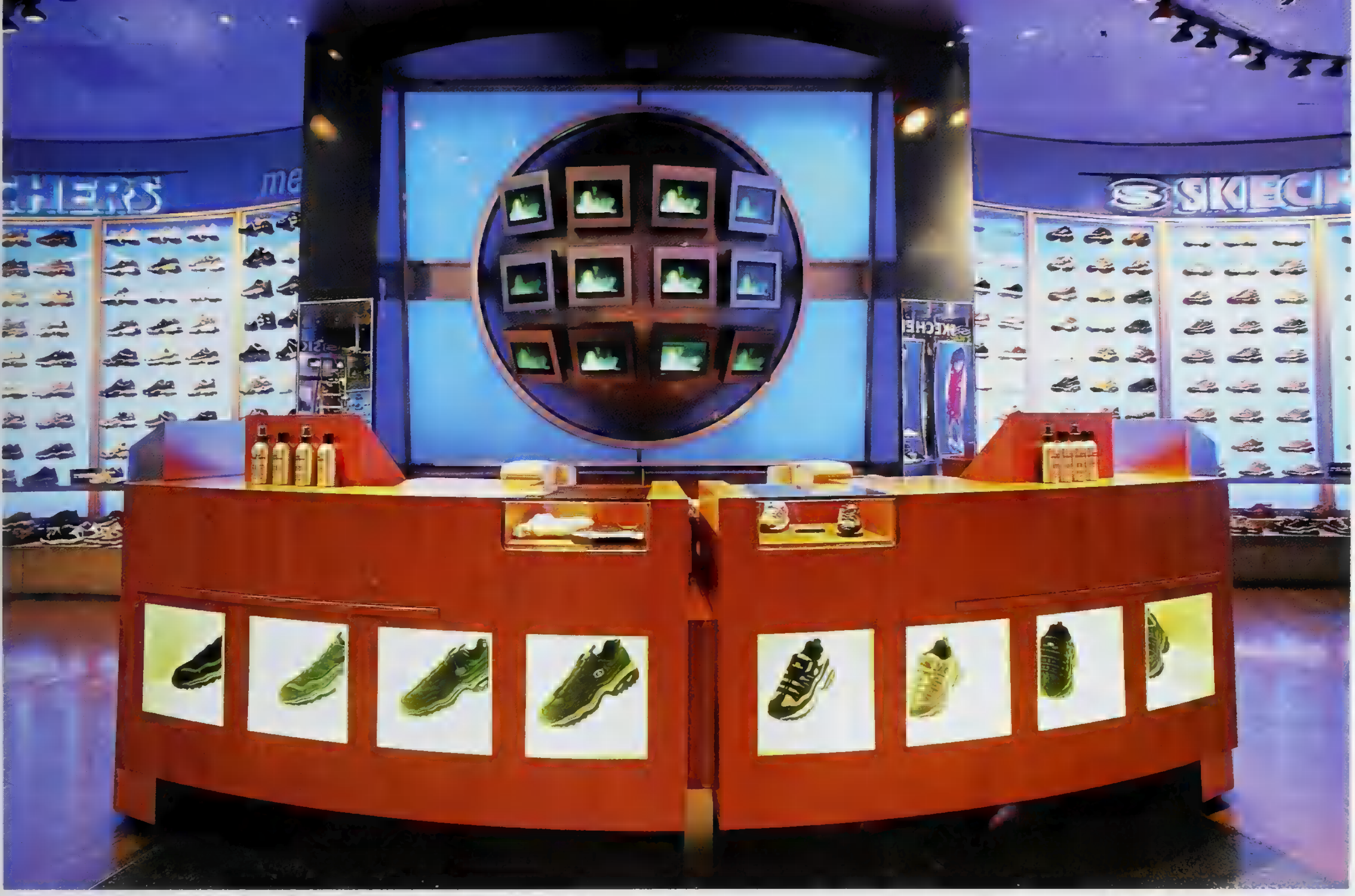
Track fixtures fitted with halogen infrared PAR lamps spotlight merchandise (this page and opposite). Multihead, low-voltage fixtures light additional displays. Compact fluorescent downlights fitted with louvers provide ambient lighting for circulation routes.



and edgy designs, Skechers was looking to establish an upgraded three-dimensional brand identity that could be adapted to other locations. Viewed from the entrance, the interior is bathed in the signature hue "Skechers blue." Translucent walls undulate with blue neon backlighting, rising toward a reflective silver ceiling. Niches enveloping footwear displays also are backlit with blue neon. The design team met with the display manufacturer to conduct mock-ups, determining the space required between the neon tubes and the cases so that the lighting elements are not visible and displays are evenly illuminated. The tops of the neon boxes have also been left intentionally open so that the ceiling receives additional bounce light from the linear runs of neon. Video walls with multiple monitors reinforce the theme of "inner glow," but were left unlighted to create contrast spill light depending on what images are showcased on-screen.

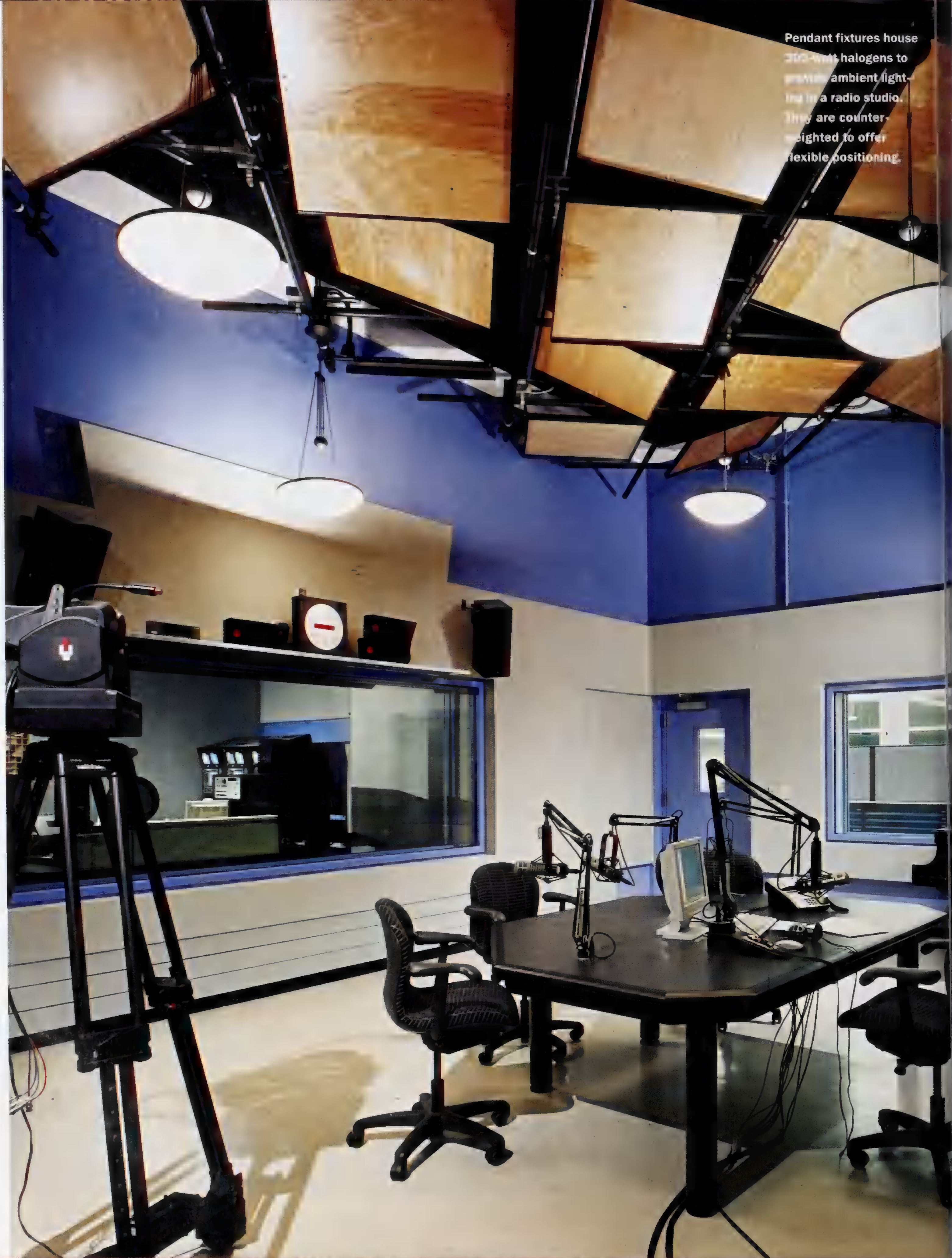
THE COMBINATION OF FLUORESCENT AND INCANDESCENT SOURCES ENSURES THAT THE VIBRANT COLORS OF THE SHOES ARE RENDERED ACCURATELY.

"Because backlit display units create the illusion of a brighter area and the silver ceiling picks up the blue sheen of the walls, we were given the latitude of reducing ambient lighting levels on the sales floor to a minimum," Jain says. Rather than the higher base-level lighting of a typical retail environment, LDA dimmed ambient levels at Skechers to between 10 and 15 foot-candles, using 32-watt high-color-rendering compact fluorescents. By contrast, adjustable low-voltage spots with a 50- to 60-foot-candle output draw attention to the backlit displays. "We created between 5- and 10-to-1 ratios between the actual displays and circulation areas around them so that the store doesn't appear very bright overall, but the merchandise is very punched up," Jain explains.

In another departure from traditional shoe-store lighting, LDA downplayed track fixtures. Accent lighting is partially concealed within a stepped ceiling that accommodates 60-watt halogen infrared PAR fixtures, which downlight displays along the perimeter of the store. To save energy, HIRs were specified instead of standard halogen lamps. Two different beam spreads are employed for flexibility: floods light the tops of displays while spots showcase the lower sections.

In the center of the store, high-color-rendering compact fluorescent downlights fitted with louvers provide ambient illumination that aids circulation. Accenting central displays, multihead, low-voltage spotlights also are integrated into the ceiling. Each fixture combines six low-voltage, narrow-spot MR16s in a design that hides wires within the fixture frame. A combination of fluorescent and incandescent lighting sources throughout the store ensures that the full spectrum of Skechers' multicolored shoe line is rendered well. "The fluorescents helped highlight the ranges of blue and green, and the incandescents helped with the yellow and red tones," Jain says.

The CityWalk Skechers has served as a prototype for new stores in New York City, London, Dusseldorf, Paris, and the company's home base of Manhattan Beach, Calif. Jain attributes the adaptability of the design to the close collaboration between the interior designers and the architects, fixture fabricators, and lighting team early in the design phase. "Lighting was valued as an element that could enhance the curvilinear forms and fixture detailing in addition to showcasing the product," he says. "The high-contrast illumination unifies the signature ambience." ■



Pendant fixtures house 300-watt halogens to provide ambient lighting in a radio studio. They are counter-weighted to offer flexible positioning.

Lighting supports a flexible work environment and polishes the image of a public broadcast studio

by Nayana Currimbhoy

Philadelphia's sister public radio and television stations, operating under the call letters WHYY, are broadcasting a new image on the city's historic Independence Mall. Housed for more than a decade in a building constructed in 1975 as a civic museum commemorating the Philadelphia bicentennial, the broadcasting corporation recently commissioned a renovation to upgrade studio facilities and recharge its community identity. Redesigned by Burt Hill Kosar Rittelmann Associates/Philadelphia, in collaboration with the Lighting Practice, the 54,000-square-foot complex incorporates advanced digital broadcast technologies within flexible work environments.

The canted planes of the new facade, with a cantilevered metal roof stretching above a double-height grid of windows, appear like components of a giant laptop popped open within the historic district. "The facade is composed of simple, abstract elements so that the building, much smaller than its neighbors, would not seem diminutive," says project architect Michael Oei, AIA. "Transparency is used as a metaphor for democracy, accountability, and openness—reflecting the station's new vision of itself as a visible, accessible, and cutting-edge operation."

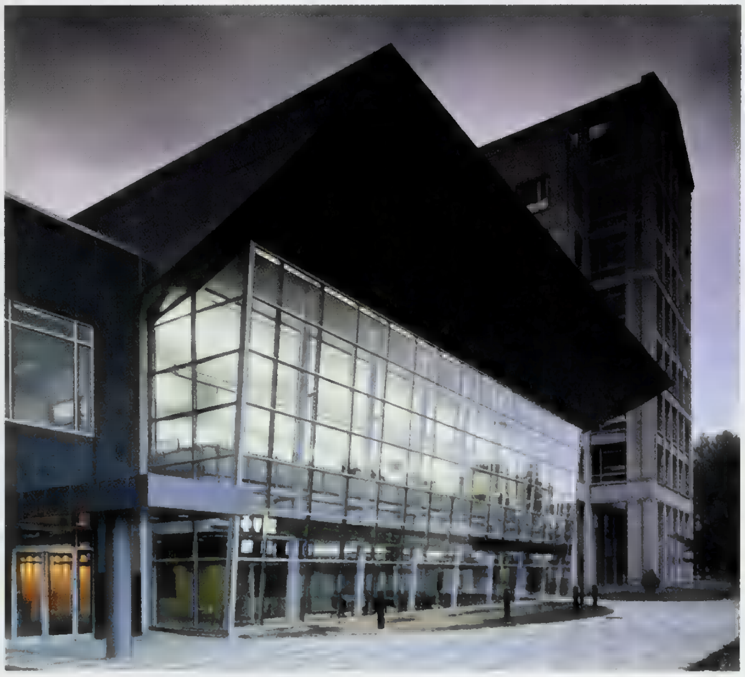
Constructed of nonreflective glass and articulated by thin mullions, the facade invites visitors or passersby to peer inside at the station's inner workings. "The building is like a television screen or personal computer; you look through a two-dimensional surface to see the three-dimensional space within," says Alfred Borden, IALD, principal lighting designer. "To emphasize the station's openness and varied departments coming together, we uplighted the ceilings and illuminated all vertical interior surfaces that are visible from the plaza."

Along the exterior, small metal-halide accent luminaires are mounted within the landscape to highlight the metal-clad edges of the building. Inside the lobby, an 80-foot-long and two-foot-high electronic ticker tape flashes a continuous amber-character display announcing news and information. Four stainless-steel screens set on a sliding track depict relevant graphic images. The panels can be used to obscure the interior broadcast studios when privacy is required.

Behind the facade, glass walls front ground-floor studios and control rooms, allowing observation of live broadcasts. Because interactivity is a byword within the new station, also visible is the Technical Resource Center, the technical heart of the enterprise that houses broadcast equipment. "Basically, we turned the station inside out," Oei says. "We brought the working elements of the building up to the line of the glass elevation."

The interior volume is configured into separate radio and television studios, conference and meeting spaces, and office areas on two floors. The high-tech imagery of the facade continues inside, with exposed structural beams complemented by finishes including glass, metal, and fiberglass. The corrugated metal of the roof sweeps inside as a canopy. Perforated aluminum materials clad ceilings, wall dividers, and stairway

Nayana Currimbhoy is a New York City-based writer specializing in design and architecture. She is a frequent contributor to RECORD LIGHTING.



Showcasing the illuminated interiors of the two-floor complex, the glass-wall facade acts as a beacon, proclaiming the station's public mission.

Project: *WHYY Studios, Philadelphia*

Architect: *Burt Hill Kosar Rittelmann Associates/Philadelphia—Michael Oei, AIA, project architect; Adrienne Carruth, project interior designer*

Lighting designer: *The Lighting Practice—Alfred Borden, IALD, principal designer; Erin Friar*

Sources

Interior downlights: *Cooper Lighting, Lithonia*

Indirect lighting: *Corelite, Neoray*

Glass pendants: *Delray Lighting*

Cold cathode: *National Cathode*

Cable lighting: *Tech Lighting*

Exterior accent lights: *BK Lighting*

Bollards: *Selux*

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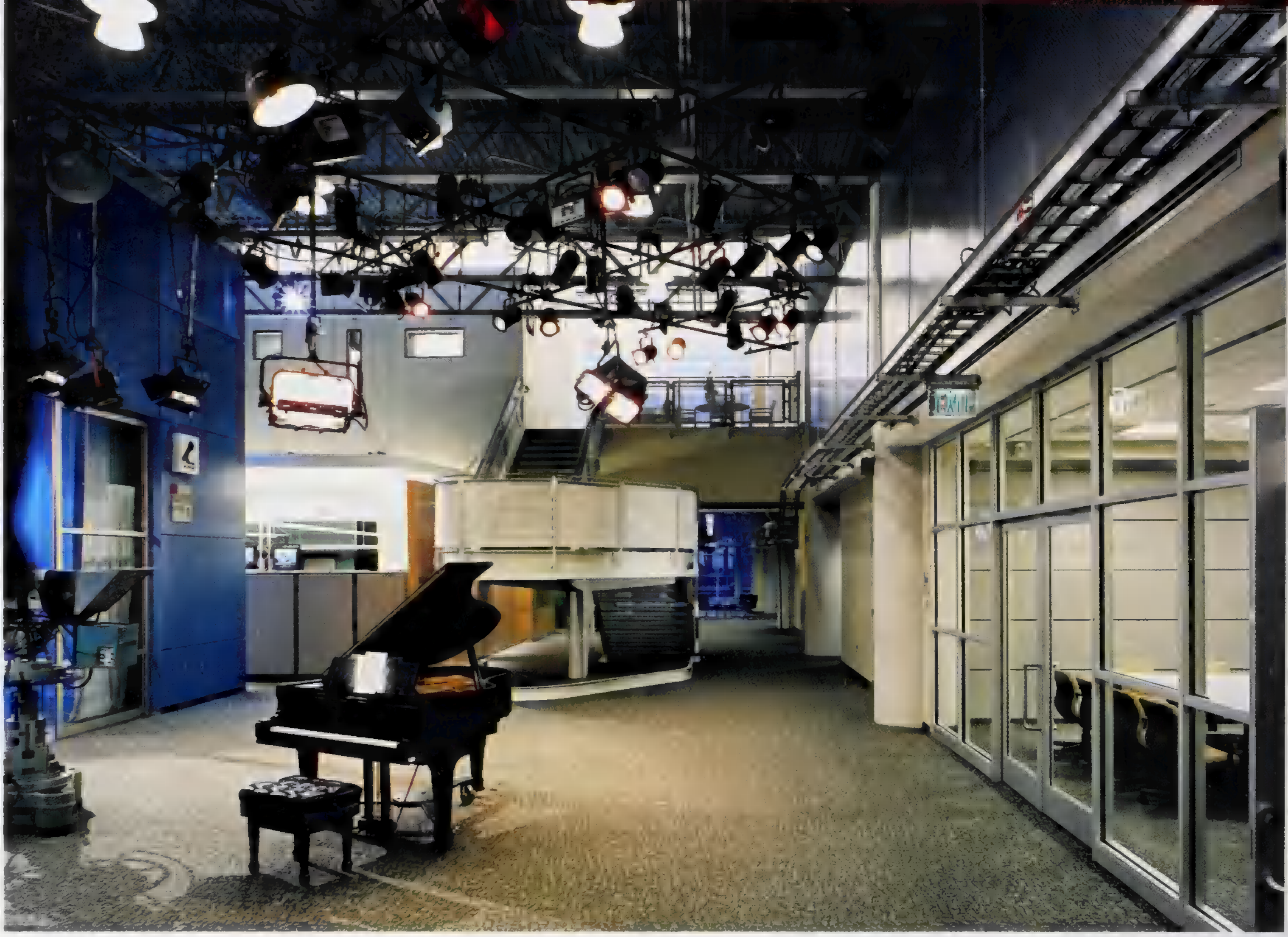
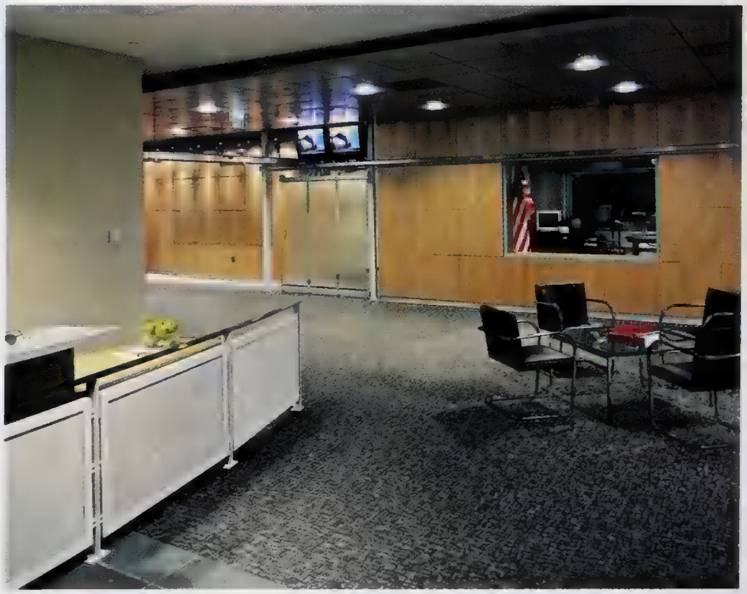


banisters. Textured-glass partitions and sliding panels provide flexibility and a degree of privacy for broadcasts.

"Besides creating a flexible work environment, we also wanted to offer a sense of drama," says project interior designer Adrienne Carruth. "There are frequent public tours of the studio, and visitors expect to see theatrics." The studio walls are painted with saturated colors—blue (a subtle reference to video monitors) for television studios and green for radio rooms. Three-sided trusses support broadcast cables and lights, while studio Fresnel fixtures have been refitted with compact fluorescent lamps with color gels. Although not bright enough to be functional, the lamps give a theatrical sheen to public areas. A performance studio, used for recording radio broadcasts and small-scale musical performances, is equipped with maple-veneer acoustical panels and a fabric-covered wall. Ceiling-mounted, 300-watt halogen pendants are equipped with counterweights so they can be lowered for versatile, scenic looks during live performances.

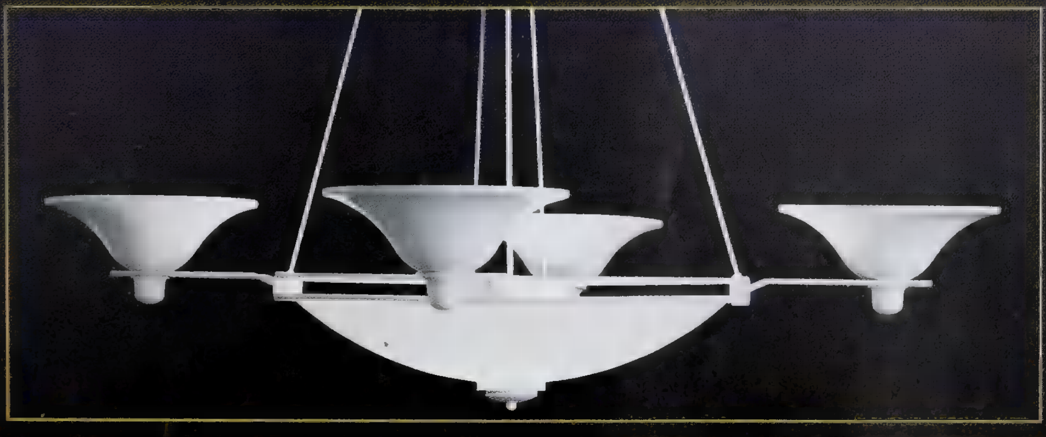
ENERGY-EFFICIENT OFFICE AND DISPLAY LIGHTING WAS A PRIORITY FOR THE PUBLICLY FUNDED TV AND RADIO STATION.

The central lobby and circulation route, referred to in-house as "the avenue," can also accommodate special events and musical performances. A steel track running above glass-enclosed studios and conference rooms is used as a channel for carrying lighting cables and equipment wiring. Here another grid of refitted theatrical fixtures adds an air of studio excitement overhead.



In a circulation lobby known as "the avenue," theatrical fixtures have been refitted with gelled compact fluorescents to evoke the ambience of live broadcasts without requiring high energy consumption (above top). A reception area employs ceiling-inset compact fluorescents fitted with blue rings (above).

PHOTOGRAPHY: © TOM BERNARD



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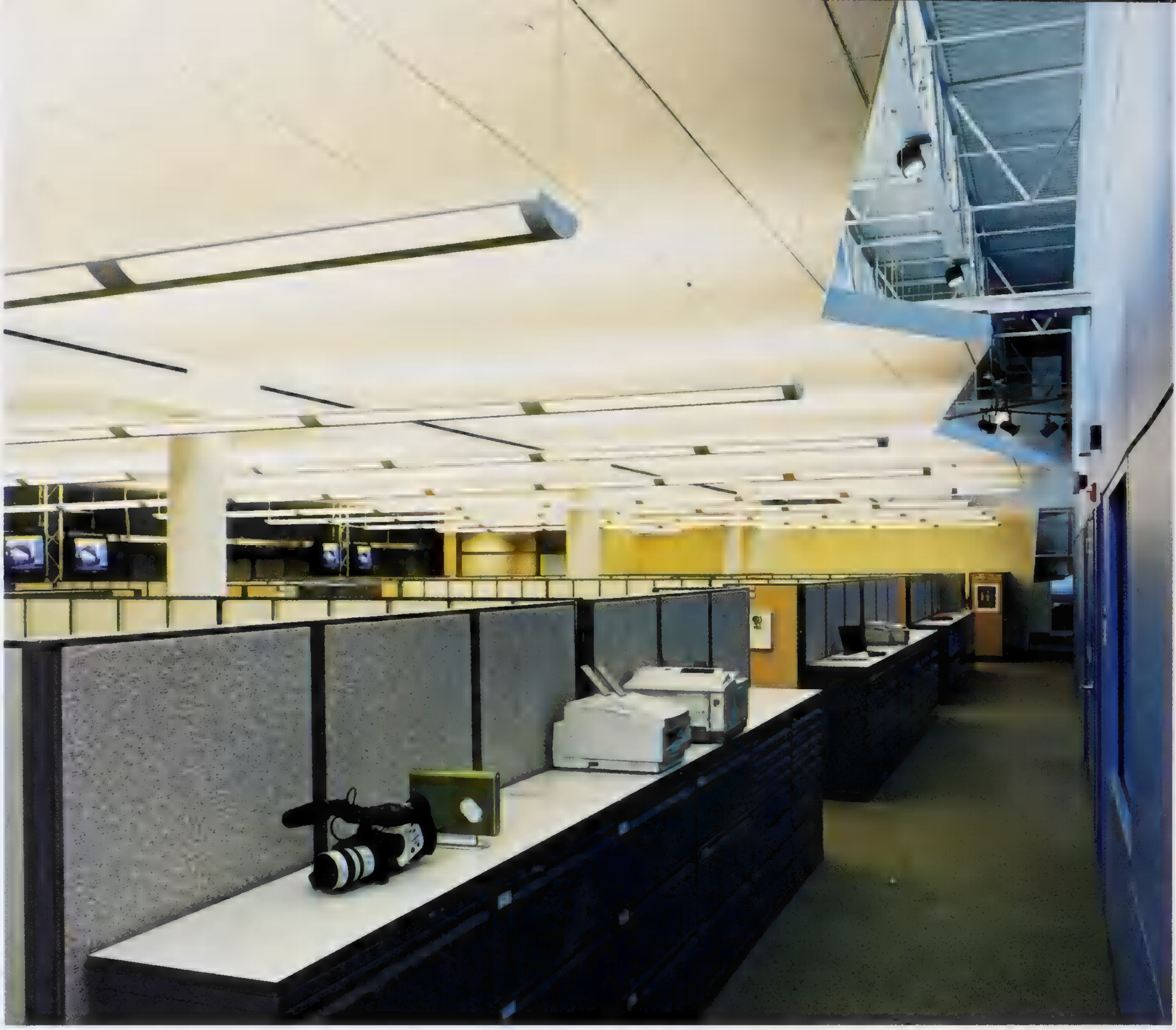


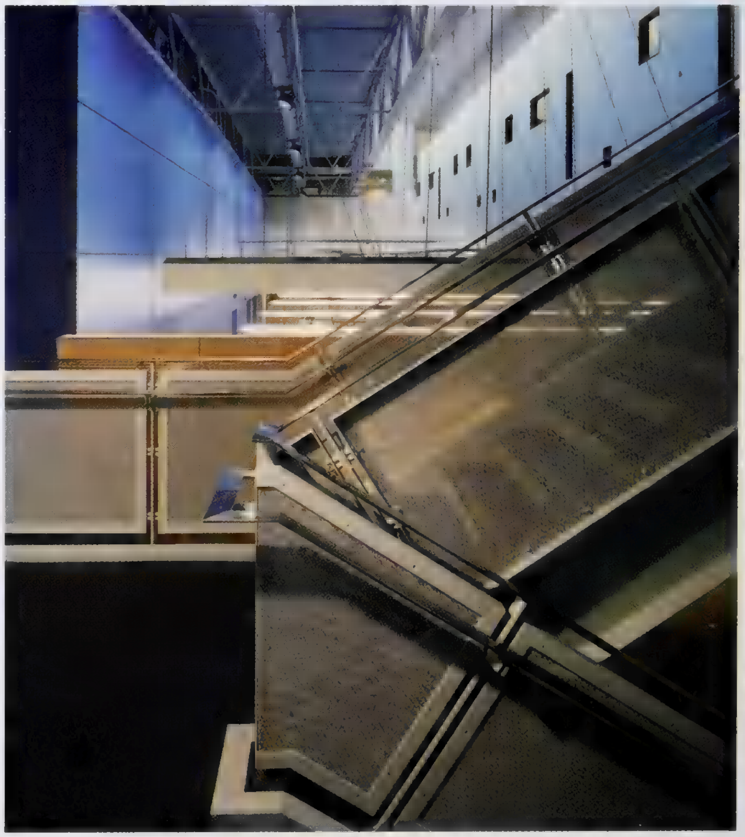
Within the second-floor office areas, runs of T8 fluorescent pendants provide both ambient and task illumination (right). Above the jagged-edged dropped ceiling, a row of metal halides washes the blue wall that encloses the broadcast television studio (right and below). Lighting works in tandem with architectural form to open the workings of the studio to the public realm.

"Because the station is a nonprofit, publicly funded organization, we had to make the lighting very energy efficient," Borden says. Cold-cathode cove lighting washes the face of the radio studios on the first floor, while evenly spaced pendant fixtures fitted with T8 compact fluorescent lamps were specified on the second floor. Indirect lighting from the lobby and public spaces creates layers of light, producing a glow behind the glass facade.

A floating ceiling dropped above workstations in the open office areas on the second level serves as an acoustical and light buffer. Suspended by steel cables from trusses, the painted ceiling—called "the cloud" by workers—features a jagged edge around its perimeter, allowing a glimpse of the uppermost metal roofing. Combination down/uplight pendants fitted with T8 fluorescents accentuate the dropped ceiling and provide ambient illumination for workstations. Above the floating ceiling, metal-halide floods are focused to accentuate the blue wall enclosing the television studio. A row of windows set within the enclosure is aligned with the offices and workspaces to provide lines of sight.

DIRECT/INDIRECT T8 FLUORESCENTS ILLUMINATE OPEN OFFICE AREAS WHILE METAL HALIDES ACCENT BRIGHT WALLS.

To further step up public outreach, WHYY plans to enhance the public plaza at its doorstep with additional lighting and media elements. Proposals include the installation of 10-foot-tall projection screens to showcase interactive videos, in which visitors would be able to manipulate their own closeup-ready images. ■



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New uplighting captures the engineering beauty of Manhattan's George Washington Bridge

by Nayana Currimbhoy

Moving toward the gloriously illuminated skyline of Manhattan by night can seem magical. Now a gateway to the metropolis extends the sensory experience. At last, the George Washington Bridge has been enhanced with lighting that spotlights its structural beauty. Reserved for holidays and special occasions, the vibrant new lighting is by Domingo Gonzalez Associates (DGA).

Designed by civil engineer Othmar H. Ammann and completed in 1931 to connect New York and New Jersey, the steel-cable suspension bridge is considered a milestone of 20th-century engineering. Though now a part of the city's visual iconography, the bridge represents a departure from its original design. Ammann intended to clad the 604-foot-tall twin support towers in stone. With the onset of the Great Depression, however, the project budget was slashed and funding for the stonework eliminated. Despite his initial dismay, Ammann became a convert to the exposed-steel aesthetic. Le Corbusier, for one, declared the completed project the most beautiful bridge in the world. "The structure is so pure, so resolute, so regular that here, finally, steel architecture seems to laugh."

Though pole-mounted floodlights installed in the 1960s lighted the bridge's roadway, previous plans to elevate the nighttime look of the bridge were never realized. DGA, which has collaborated with the Port Authority of New York and New Jersey on various city transportation lighting projects, recently won an invited competition to relight the bridge.

To enhance the symmetry and purity of the structure, the designers focused their plan on lighting the two towers. "We were driven by the image of the structures glowing from within, like crystals," says senior designer Abhay Wadhwa. "We agreed that the cool color achieved by metal-halide lamps would best complement the steel structure."

The typical variables of a lighting project—number of fixtures,

---

Project: *George Washington Bridge, New York City*

Owner: *Port Authority of New York and New Jersey (PANYNJ)*

Lighting designer: *Domingo Gonzalez Associates—Domingo Gonzalez, principal; Abhay Wadhwa, senior designer; Gene Golus, senior designer; Suvanee Buranasilapin, junior designer*

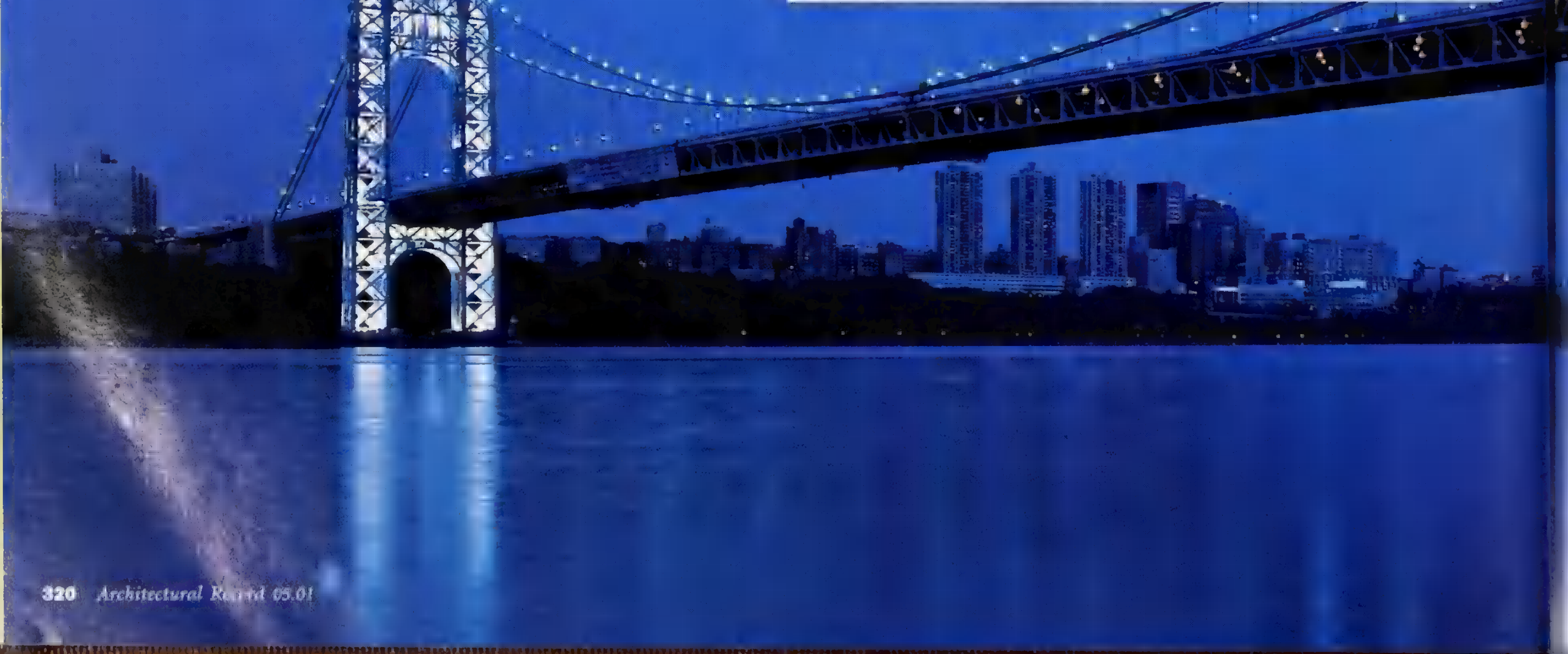
Engineer: *PANYNJ Engineering/Architecture Design Division—Jack Buchsbaum, chief electrical engineer*

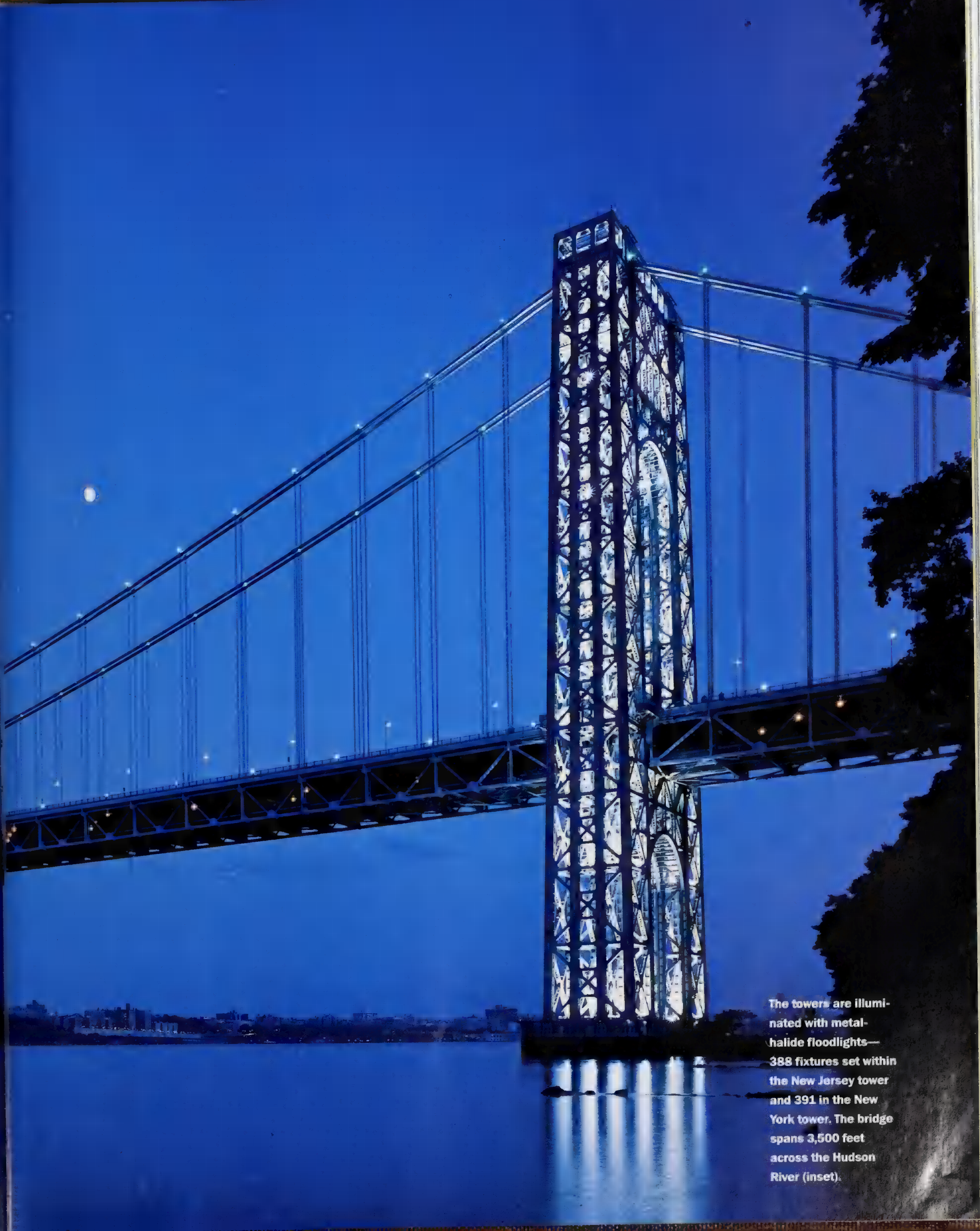
Sources

Metal-halide fixtures: *General Electric*

Software: *Lighting Analysts*

WWW For more information on the people and products involved in this project, go to Lighting at **www.architecturalrecord.com**



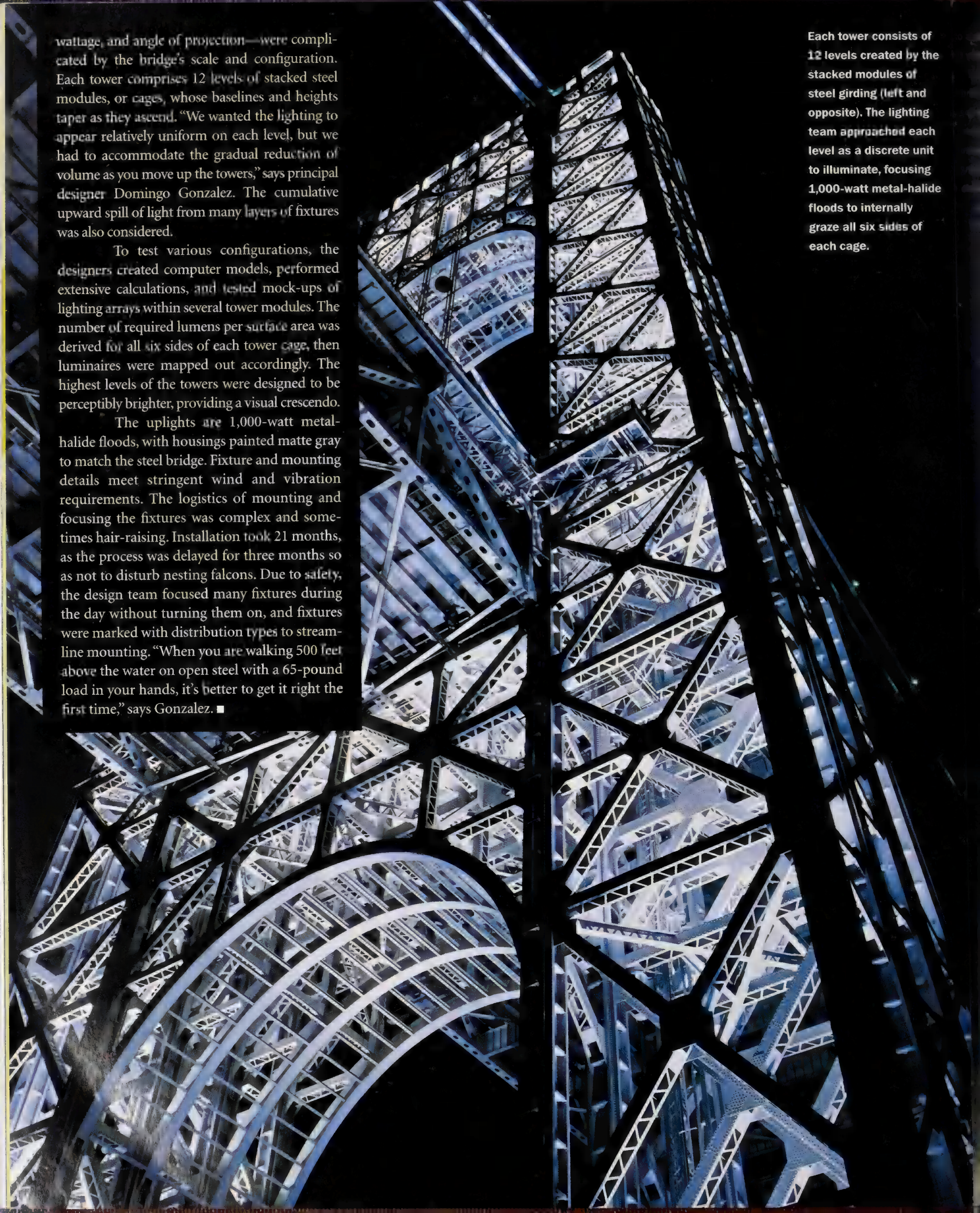


The towers are illuminated with metal-halide floodlights—388 fixtures set within the New Jersey tower and 391 in the New York tower. The bridge spans 3,500 feet across the Hudson River (inset).

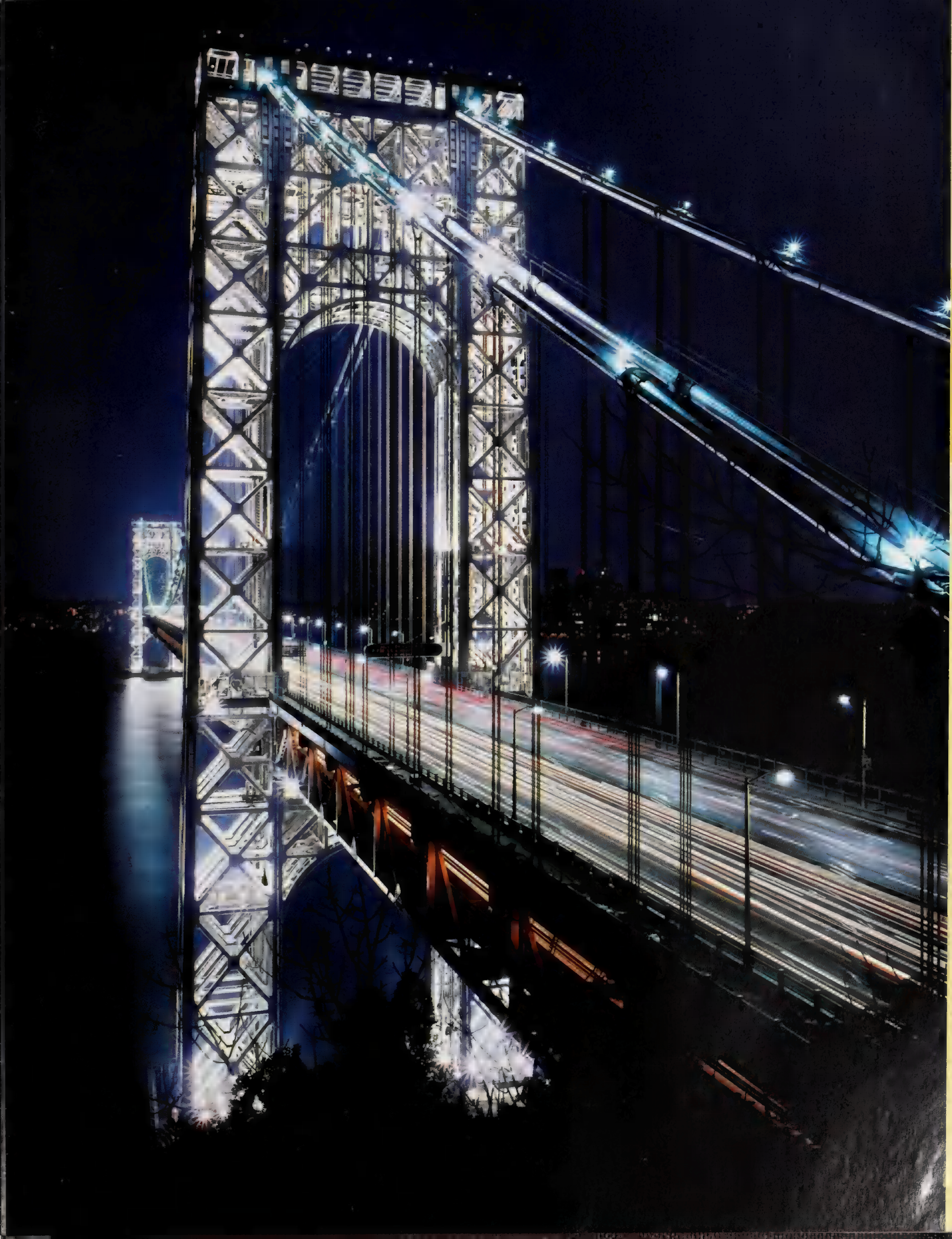
wattage, and angle of projection—were complicated by the bridge's scale and configuration. Each tower comprises 12 levels of stacked steel modules, or cages, whose baselines and heights taper as they ascend. "We wanted the lighting to appear relatively uniform on each level, but we had to accommodate the gradual reduction of volume as you move up the towers," says principal designer Domingo Gonzalez. The cumulative upward spill of light from many layers of fixtures was also considered.

To test various configurations, the designers created computer models, performed extensive calculations, and tested mock-ups of lighting arrays within several tower modules. The number of required lumens per surface area was derived for all six sides of each tower cage, then luminaires were mapped out accordingly. The highest levels of the towers were designed to be perceptibly brighter, providing a visual crescendo.

The uplights are 1,000-watt metal-halide floods, with housings painted matte gray to match the steel bridge. Fixture and mounting details meet stringent wind and vibration requirements. The logistics of mounting and focusing the fixtures was complex and sometimes hair-raising. Installation took 21 months, as the process was delayed for three months so as not to disturb nesting falcons. Due to safety, the design team focused many fixtures during the day without turning them on, and fixtures were marked with distribution types to streamline mounting. "When you are walking 500 feet above the water on open steel with a 65-pound load in your hands, it's better to get it right the first time," says Gonzalez. ■



Each tower consists of 12 levels created by the stacked modules of steel girding (left and opposite). The lighting team approached each level as a discrete unit to illuminate, focusing 1,000-watt metal-halide floods to internally graze all six sides of each cage.



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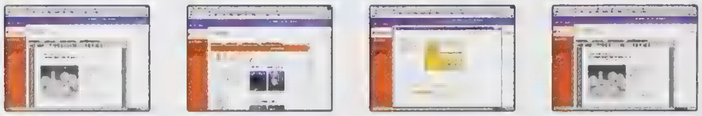

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The uplit Lake Robbins Bridge acts as a nighttime gateway to a new River Walk-style development

By Charles Linn, AIA

From a distance, the 600-foot-long, 120-foot-tall bowstring truss that spans Lake Robbins at The Woodlands, Tex., appears to support a bridge. In fact, the arc of steel really serves as a visual gateway to the commercial center of this new town and doesn't support anything but itself—the bridges that have been constructed on both sides of the truss are supported by concrete piers.

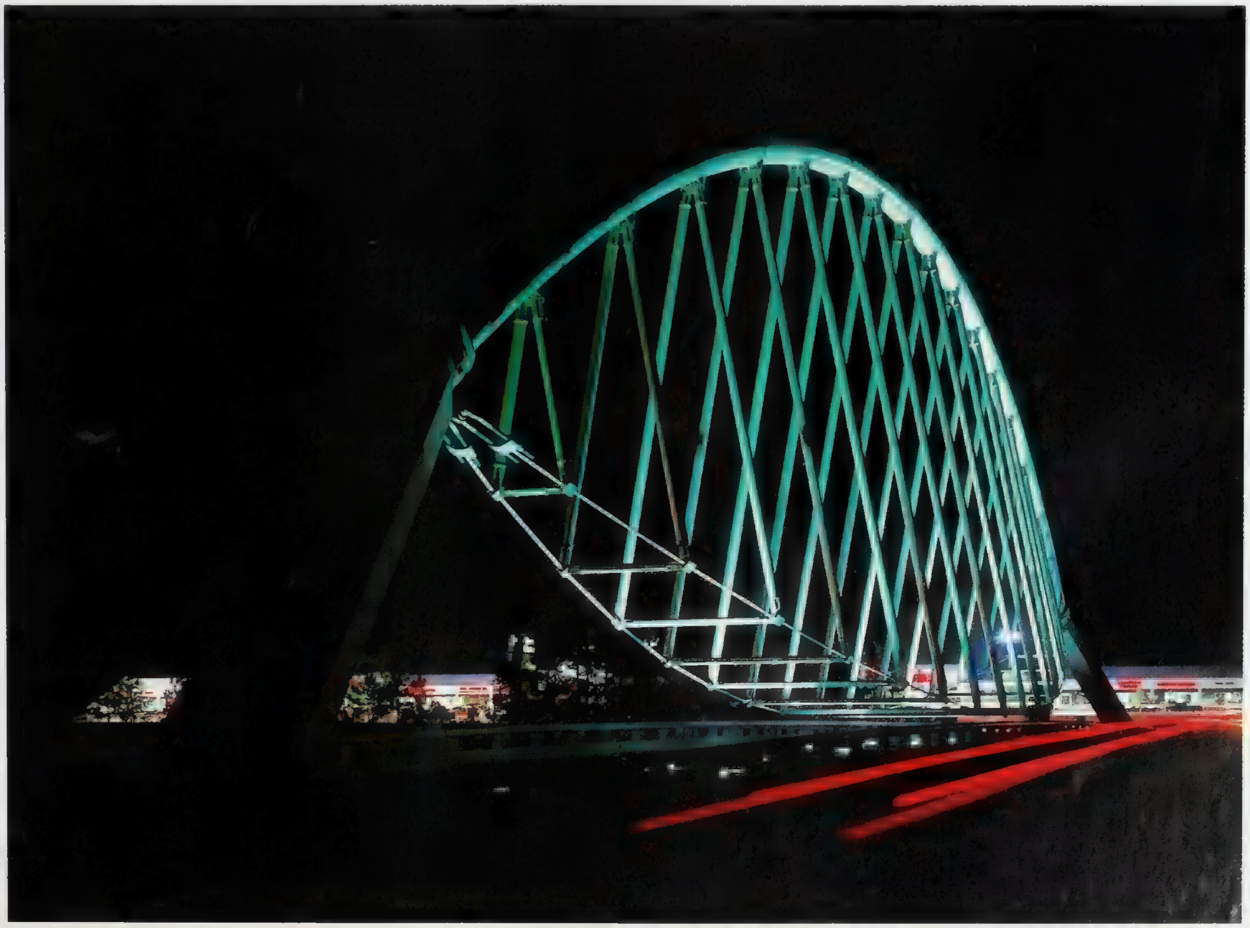
Why build such a large, elaborate sculpture? To answer the question, it is necessary to know something about ongoing development at this highly successful planned community. Planning for The Woodlands, which is located about an hour's drive north of Houston, started in 1969 as part of the New Community Act, and construction began in 1973. The idea of integrating home, education, retail, and clean industry within a planned development worked, and today the town of 65,000 is thriving.

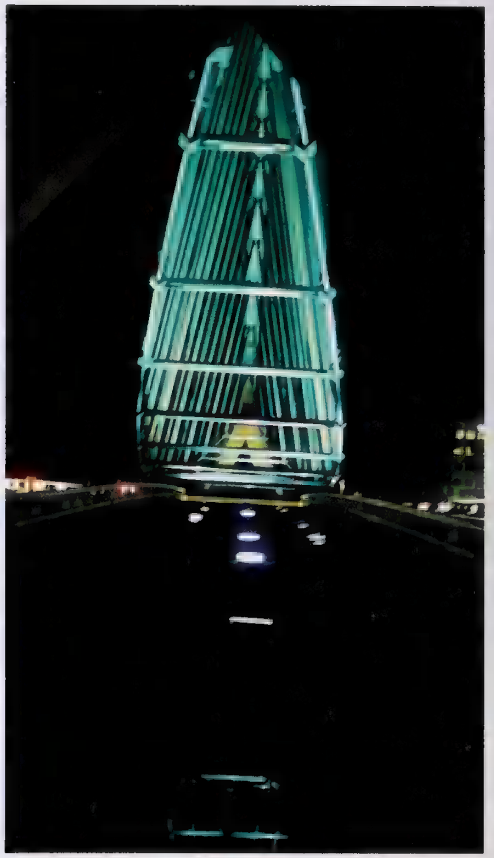
Lake Robbins is a reservoir constructed when The Woodlands was first developed. A former drainage ditch that runs between Lake Robbins and nearby Lake Woodlands is now being transformed into the Town Center Waterway, a new commercial and retail development that is intended to be reminiscent of San Antonio's River Walk. This 1½-mile-long development will include shops, restaurants, offices, and linear parks and will be served by public and waterborne transit. The Lake Robbins Bridge is a critical piece of the master plan because it will anchor one end of the waterway. It already marks the entrance to the commercial district from nearby Interstate 45 and has become a local landmark.

THE ILLUMINATED BOWSTRING TRUSS OF THE BRIDGE PROVIDES VISUAL EXCITEMENT RATHER THAN STRUCTURAL SUPPORT.

Designer John Bos, principal of Bos Lighting Design, explains how the shape of the bridge evolved out of the design process. "The first iteration was a real bowstring truss bridge. But when the designers found out what it would cost, they value-engineered it into two self-supporting bridges. They liked the image of the bow, so they kept the shape but made it nonstructural. The concrete abutments were con-

The steel members of the Lake Robbins Bridge are illuminated from below so their interior surfaces are grazed, while their exterior surfaces are kept in shadow. This silhouetting helps preserve a sense of the dimensionality of the truss, whereas floodlighting would have given the structure a flattened appearance.





The truss is installed in a 50-foot-wide space between two bridges. The metal-halide fixtures uplighting the sculptural truss are centered on steel crossbeams that span this opening (above).

structed first, followed by the large top arch. The apexes of triangular web members were then hung from the top arch, and a light inverted arch was suspended from the bottom corners of each web triangle.

"The original idea for lighting the sculptural truss was to mount pole lights on the inside lane of each bridge and floodlight it," Bos continues. "We argued that it would flatten the appearance of the structure, because with the inside and outside of the bridge lit equally, you'd see all the members, but you wouldn't be able to see the volume space captured by the structure."

Bos turned the problem inside out by uplighting the inside surfaces of the structural members from below and letting the outsides go into silhouette. "In this way," he explains, "you're always seeing through a dark foreground to a lit background, which gives a lot of depth." The metal-halide floodlights were mounted on steel beams that cross the 50-foot-wide open space between the bridges. To accommodate the variations in height and width of the structure, 24 fixtures were used, with various beamspreads and lamp wattages ranging from 250 to 400 watts.

Steplights with 70-watt metal-halide lamps are mounted into the handrails of each bridge to send beams of light skimming across traffic lanes. "They're really markers and run the entire length of the bridge," says Bos. "Therefore we were able to avoid using poles on the bridge, which would have interfered with the appearance." Beyond the bridge, the roadway picks up with shoebox-type street lighting. ■

Project: *Lake Robbins Bridge, The Woodlands, Texas*
Owner: *The Woodlands Corporation*
Architect: *Ford, Powell, and Carson—Boone Powell, FAIA; David Achterberg*
Lighting designer: *Bos Lighting Design—John F. Bos, Becky Bowen*
Structural engineer: *CBM Engineers—Joe Collosi, Wally Ford*
Construction manager: *Carter & Burgess*
General contractor: *NGB Constructors*

Sources
Exterior floodlights: *Sterner/Infranor*
Roadway steplighting: *Cole Lighting*
Sconces: *Poulsen*

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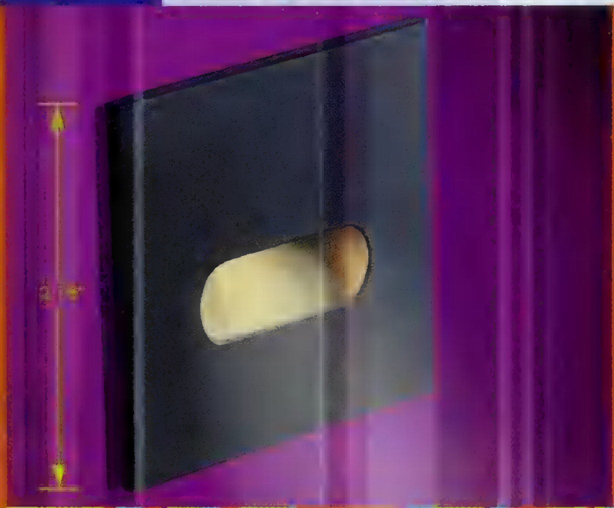

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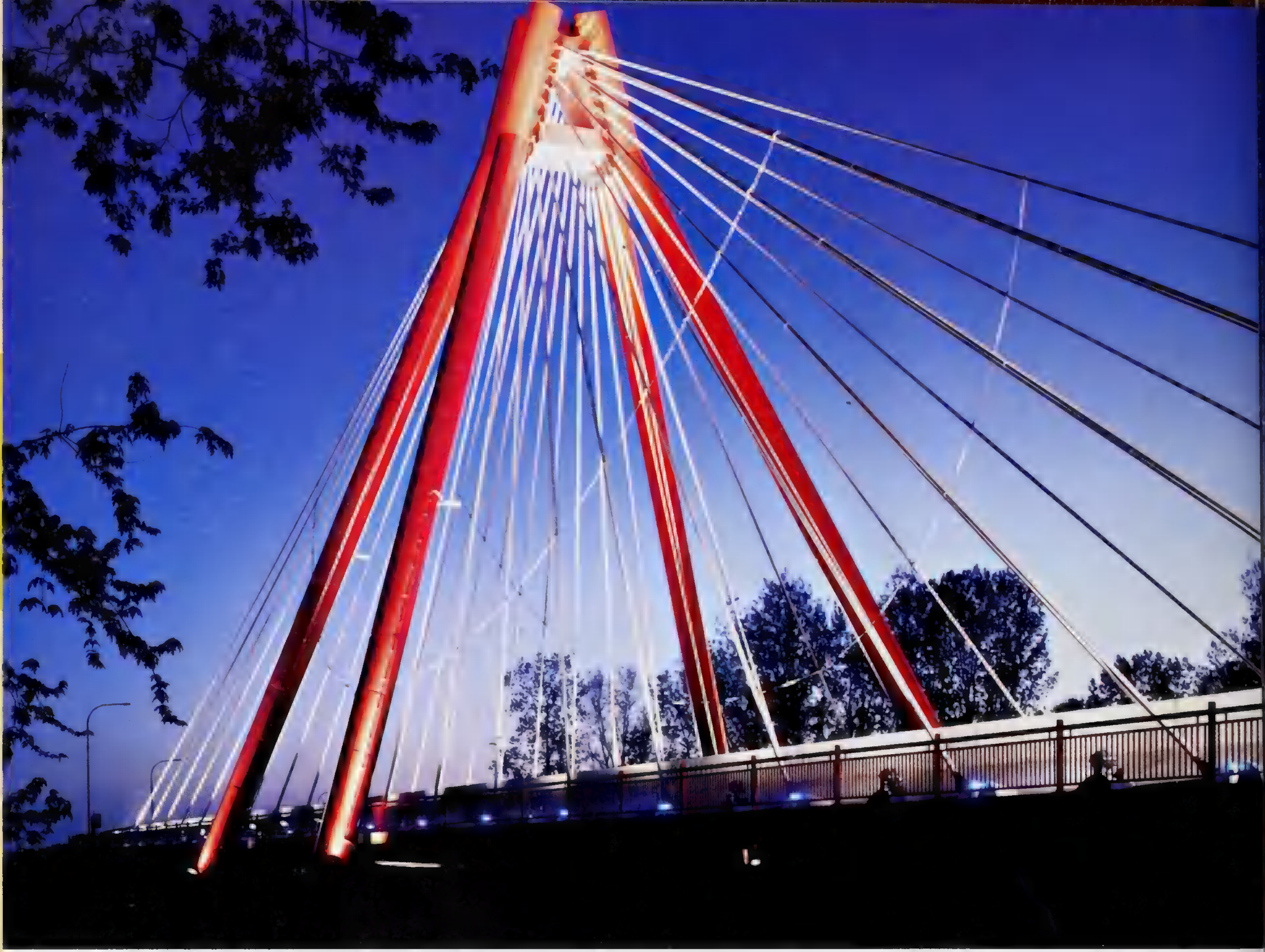


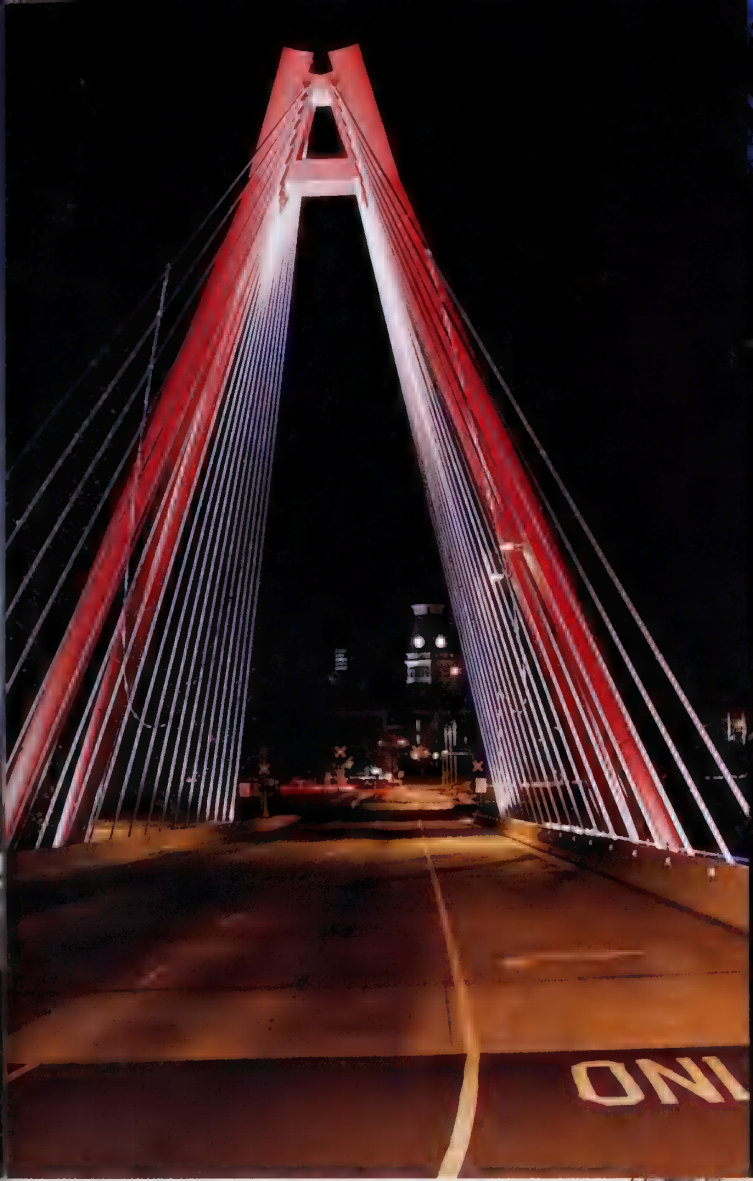
A new suspension bridge in Columbus, Indiana, employs custom fixtures to reflect civic pride

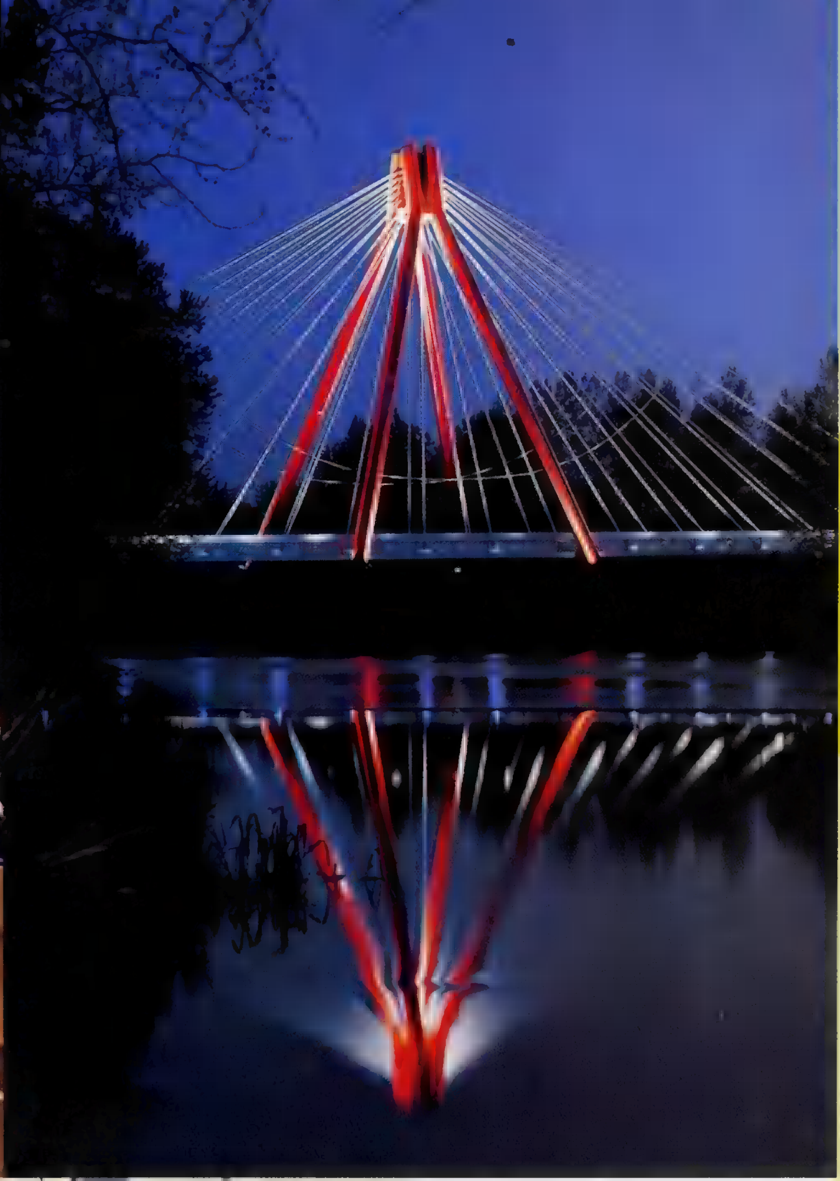
by William Weathersby, Jr.

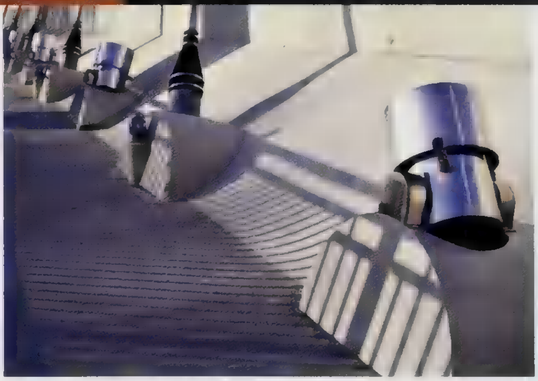
Columbus, Indiana, is a Midwestern mecca of 20th-century architecture. Buildings by Pritzker Prize-winners Meier, Pei, Roche, and Venturi share the cityscape with works by Modernists including Gwathmey Siegel, Pelli, SOM, and Saarinen. A graceful new bridge now provides a prelude to this concentration of architectural richness. Illuminated at night, the structure's sweep of cables are like strings of light fanning out in civic pride.

Designed by J. Muller International with lighting by Schuler & Shook, the Second Street Bridge welcomes motorists on their eastward approach to downtown. The axis of the cable-stayed suspension bridge is aligned with the 1874 Bartholomew County Courthouse and Saarinen's First Christian Church Tower of 1942, two milestones in the city's design timeline. Traffic is routed one-way across the four-lane bridge, leading from a state highway to a central city thoroughfare. "The bridge is a primary conduit into Columbus," says principal lighting designer Robert Shook. "Lighting the bridge was an opportunity to establish a strong first impression for motorists. The bridge serves as a guidepost that signals the city's vested interest in civic design."

RECORD contributing editor William Weathersby, Jr., is a writer based in Westport, Conn. He frequently reports on lighting design.







Blue marker lights indicate the connection of cable stays to the roadbed, while metal halides follow the length of the cables (opposite and above). Two high-pressure sodium luminaires mounted at the top of the pylon legs light the roadbed. Vandal-proof luminaires are mounted in metal brackets to lock-in the fixture focus (left).

The goal of the lighting plan was to accentuate the structural design of the bridge. "Light shines up the cables in the same way as the structural load is carried," says designer Jim Baney. The superstructure is fully suspended from a single quadripod pylon by two inclined planes of 40 stays. Blue marker lights designate the juncture where each cable stay engages the bridge deck. The stays and four pylon legs are grazed from below by metal halides to emphasize their verticality.

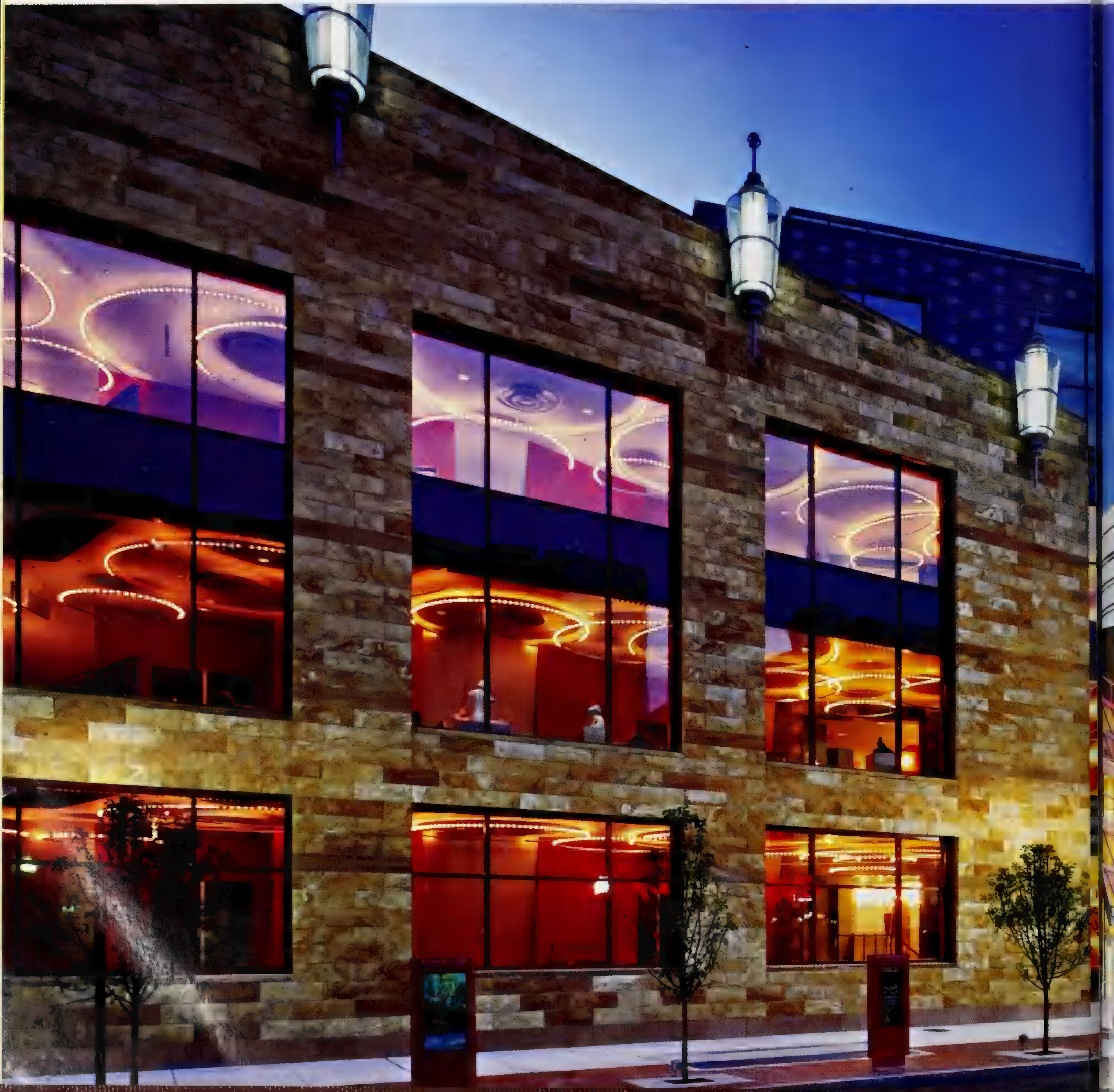
Illuminating the cable stays evenly required custom fixtures, lenses, and mounting brackets. With one luminaire set between every two stays, the fixtures are fitted with aluminum reflectors. An internal spread lens interrupts the beam to focus light for two purposes; A seven-degree portion of the beam grazes the top of the stay while a 50-degree beam spread illuminates the stay's lower section. Custom metal mounting brackets integrate the fixtures within the bridge deck and allow locked fixture aiming. Because all stay and pylon accent lighting fixtures are mounted below the elevation of the roadway, the concrete side-barrier walls shield fixtures from view. With precise optical control of the fixtures and low ambient lighting requirements, each stay lighting fixture requires only a 70-watt T6 ceramic metal halide lamp. ■

Project: *Second Street Bridge, Columbus, Indiana*
Bridge designer, civil engineer: *J. Muller International—Daniel Burroughs, P.E., Eddie He, Jeff Borgsmiller*
Lighting designer: *Schuler & Shook—Robert Shook, IALD, principal; Jim Baney, IALD, Emily Klingensmith, designers*
Electrical engineer: *Rotz Engineers*

Sources
Stay and pylon fixtures: *ARC Lighting*
Marker fixtures: *Pauluhn*
Roadway fixtures: *GE*

WWW For more information on the people and products involved in this project, go to Lighting at ***www.architecturalrecord.com***

Custom luminaires mounted on the facade of the Whitaker Center were inspired by the historic lanterns of local bridges (below). "The architects wanted the fixtures to appear almost transparent during the day, so we fabricated them with two layers of perforated metal," says lighting designer Francesca Bettridge. The fixtures house standard wet-location fluorescents. Gracing the walls of the main lobby, sconces set in a grid comprise fluorescents and acrylic disks layered atop copper mirrors (opposite).



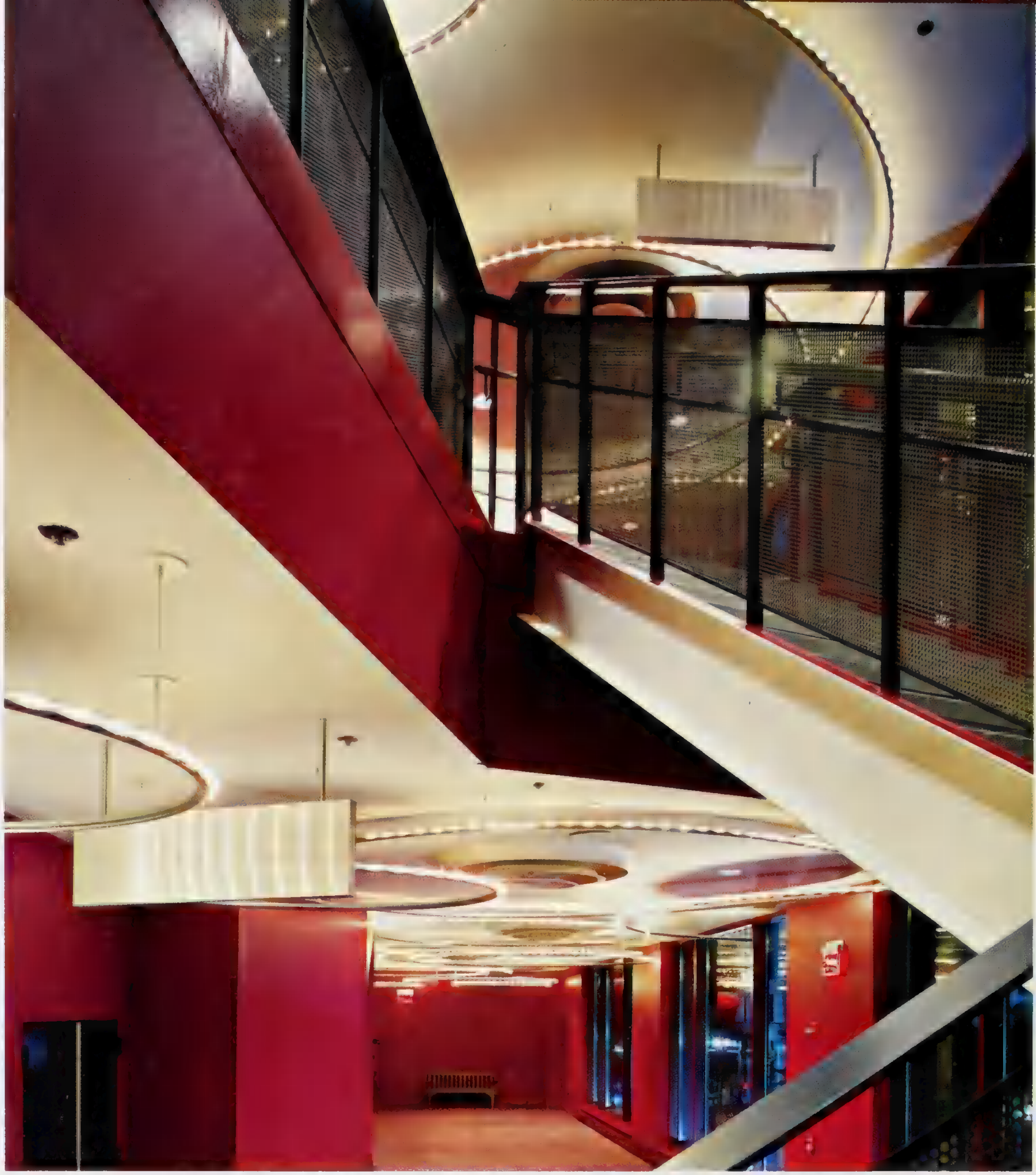
Combining venues for theater, film, and science, a new civic center features lively lighting that serves as a decorative and unifying element

by William Weathersby, Jr.

Is it science or art? At a new civic complex in Harrisburg, Pa., the answer to that perennial question is, "Both." Designed by Hardy Holzman Pfeiffer Associates with illumination by Cline Bettridge Bernstein Lighting Design, the Whitaker Center for Science and the Arts combines under one roof a science museum, 600-seat performing arts theater, and 200-seat IMAX cinema.

"The center encompassed an unusual mix of programming," says project architect Stewart Jones, AIA. "The city sponsors and developers wanted to build both a science exhibition and commercial theater within a modest budget, and the IMAX cinema became the economic engine that made the plan feasible. The challenge was to support the varied functions within a building that presents one cohesive sense of place."

Lighting at the 130,000-square-foot center establishes a signature look. While architectural lighting assignments often require designers to recess or mask fixtures within architectural forms—in effect making lighting elements disappear—here the design mandate was the converse. "Working within a tight budget, the design team decided early on that lighting would



The theater vestibules and corridors showcase "halos of light." Custom ceiling-mounted rings studded with low-voltage lamps are suspended at three heights to create a sense of movement. "The fixtures foreshadow the circular motifs inside the theater," Bettridge says. Additional halogen strips illuminate surfaces such as perforated-metal banisters.

PHOTOGRAPHY: © MICHAEL MORAN

play a very visual, decorative role," says principal lighting designer Francesca Bettridge. "Rather than use expensive finishes or grand fixtures, we had to be creative with affordable lighting effects to add excitement to public spaces." Lighting cues the interconnection of the theater, science exhibition, and cinema, yet gives each area a distinct look. "There is a consistent motif throughout—circles of light playing off rectilinear forms," Bettridge says.

The distinctive facade's sloping roofline helps the Whitaker Center address the context of varied building heights along Market Street. Mottled sandstone, a local material, clads the main sections of the complex. Punctuating the building's mass is a central rotated cube, which is clad in slate combining gray, green, and red hues. This three-story volume serves as a joint lobby for the separate domains of the complex. Large windows offer views to passersby and occupants and allow the building to become a glowing landmark at night. Custom-illumined lanterns, inspired by the historic lighting fixtures of the nearby bridges crossing the Susquehanna River, accentuate the street-facing elevations.

Within the main lobby, a brightly patterned carpet is framed by a multi-wall grid of sconces. The fluorescent fixtures comprise layered disks of transparent and translucent acrylic mounted atop square copper mirrors. By day, a scrimlike, metal-mesh ceiling appears transparent and allows daylight in. At night, the lobby becomes a warm gathering space, with recessed accent fixtures within the perimeter soffit highlighting the interior. Dimming allows varied lighting levels for special events.

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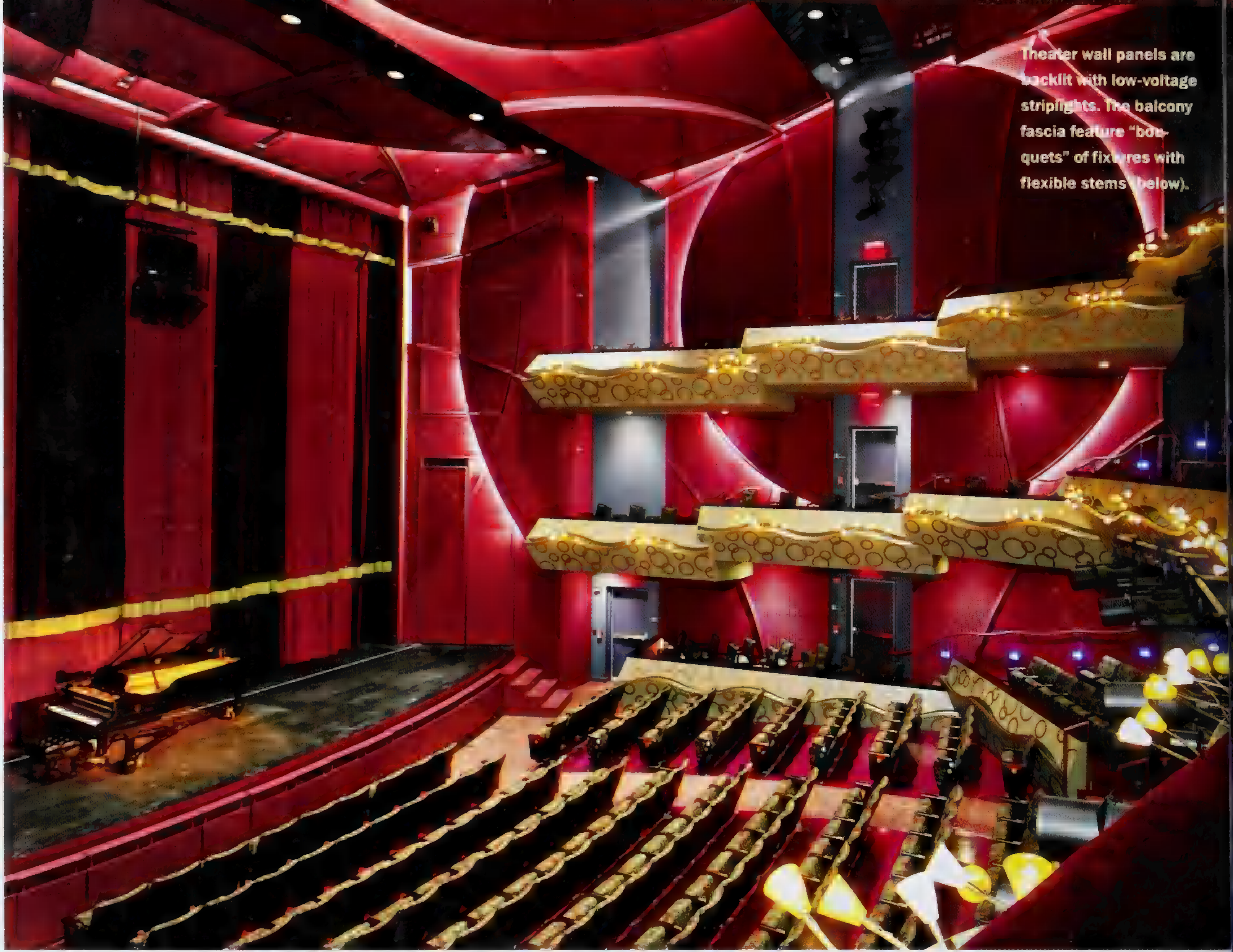


Theater wall panels are backlit with low-voltage striplights. The balcony fascia feature "bouquets" of fixtures with flexible stems (below).

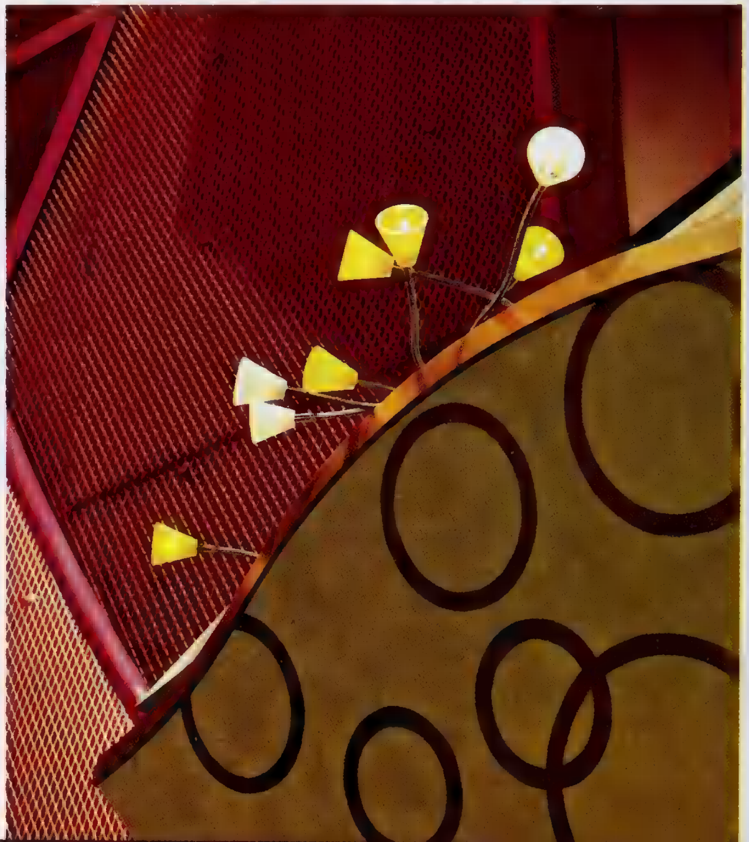
washers, and floor-recessed fixtures create ambient illumination.

Within the auditorium, red perforated-metal wall panels are backlit with low-voltage strip lights. Balcony fascia, featuring patterns of colliding circles, are embellished with outcroppings of low-voltage fixtures on stems of three lengths. "The fixtures are an abstract homage to the fanciful fixtures found in Art Nouveau theaters," Bettridge says. ■

Project: *Whitaker Center for Science and the Arts, Harrisburg, Pa.*
Architect: *Hardy Holzman Pfeiffer Associates—Hugh Hardy, FAIA, partner-in-charge; Stewart Jones, AIA, project director; Jonathan Schloss, AIA, project architect*
Associate architect: *Murphy & Dittenhafer*
Lighting designer: *Cline Bettridge Bernstein Lighting Design—Francesca Bettridge, principal; Michael Hennes, Jules Gim*

Sources
Metal-halide downlights: *Lightolier*
Metal-halide uplights: *Rambusch*
Accent lights, wall washers: *LSI*
Circular track-mounted accent lights: *Bruck*
Suspended ring lights: *Sentinel*
PAR38s: *Kirlin, Lightolier, Miroflector*
Low-voltage strip lights: *Ardee*
Decorative fixtures: *Light Project*
Lobby sconces: *Luxo*
IMAX lobby pendants: *Poulsen*

WWW For more information on the people and products involved in this project, go to Lighting at **www.architecturalrecord.com**



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Global Changes Will Affect Building Design

UTILITY DEREGULATION, ENERGY PRICE HIKES, AND GLOBAL WARMING WILL EVENTUALLY AFFECT BUILDING DESIGN. HERE ARE SOME POSSIBLE SCENARIOS.

By Lindsay Audin

Recent crises caused by utility deregulation and energy price hikes, and even changes in the earth's climate, indicate that potential long-term changes in building design and architecture are on the horizon. Here is a survey of what is already happening and what may be in store in the future.

Energy prices: what a long, strange trip it's been

Now that the energy-price roller coaster is again accelerating upward, we are hearing renewed calls for conservation, alternative energy sources, and more gas and oil exploration and production. The past 30 years have seen some energy prices rise by more than 500 percent, fall again, spike during the Gulf War, then flatten out for nearly a decade. During this same period, however, we have seen a number of changes in the way buildings are designed and managed. For example, cheap microchips have enabled development of many kinds of energy management systems; tougher codes have reduced energy use in new structures; a variety of more efficient power generation and conversion technologies has appeared; and advances in lamp and luminaire design have changed the ways we illuminate our environments. But the powerful forces that wrought these changes are really only beginning their work. Now that we are firmly entrenched in the new millennium, architects can expect many other developments.

Small-scale generating and load harvesting

Right now a lot of money is being invested in strategies that are intended to prevent, or at least lessen, the effects of the peak demand conditions experienced recently in the West. Building owners are taking advantage of these temporary energy crises by looking for ways to use their facilities as "power plants" that can sell energy back to local utilities when the price is right. In California, Pennsylvania, New York, New England, and the Midwest, there is already a rush to install new on-site generation both to avoid localized blackouts and to sell power back to utilities when wholesale prices spike.

Other building owners "harvest load." The amount of power they conserve is a real commodity that can be sold on the market, the same as generating capacity, when peak demand outstrips peak supply. Product vendors are hawking everything from lighting controls to photovoltaic glazing as possible sources of saved capacity that owners can "bid to the grid," selling it either to an independent service provider, a power marketer, or utility that either needs the capacity to balance supply with demand or wants to resell it to others in need of power. State energy agencies are offering grants and other incentives to speed up this process. Makers of dimming products have assumed a leading role in promoting ways to take advantage of daylighting as a potential source of harvested load.

As a result of the power crunch in various parts of the country, new buildings, such as 4 Times Square in New York City, have ignited the public's imagination by incorporating fuel cells, photovoltaic panels, and microturbines—miniature generators, 100 kW or less, that can use natural gas, untreated coal gas in open fields, methane from landfills, and other fossil fuels to generate power on-site. A New York power cooperative, 1st Rochdale, has gotten into the act by becoming a retail power provider as well as a promoter of the tiny generators, fuel cells, and photovoltaics.

The incorporation of such options into new buildings and major renovations will surely be subject to the same cost analyses as any other option, but some major corporations also see this issue as a way to polish their corporate images. How often does one of the Fortune 1000s get a chance to show off how it's saving the environment supporting the local utility in its time of need, while, of course, turning a profit?

How many BTUs are locked in your building's materials?

In 1977, architectural pioneer Richard Stein wrote *Architecture and Energy*, a book that examined the amount of energy used to manufacture building materials. From Stein's perspective, structural design was often a source of energy waste because it used too much concrete and steel, materials that require a great deal of energy to manufacture. His imagination led him to propose a number of intriguing structural changes to reduce that waste. Among his solutions were columns that tapered as they rose instead of being uniformly cylindrical. Such ideas never caught on, probably because the cost of those materials remained low and it was

Lindsay Audin is the president of Energywiz, Inc., an energy and technology consulting firm (www.energywiz.com).

difficult to change traditional engineering and construction practices.

Today, the volatile pricing of power has actually led some aluminum and cement processors in the western U.S. either to shut down or to cut back production because the cost of the power they had bought in advance for their factories was greater than the value of the products they were making with it. Could this occasional situation trigger higher, or even seasonal, prices for some basic construction materials that are electricity or natural-gas junkies? If so, it may be time for architects to recall Stein's ideas and either rethink which materials are used or reengineer them to conserve the use of materials. It may become routine to substitute high-strength composites for other conventional materials, and if the prices of these composites continue to decrease and demand increases, a technology revolution could result.

OCCASIONALLY THE COST OF POWER TO MAKE CEMENT AND ALUMINUM HAS BEEN MORE THAN THE MATERIALS ARE WORTH.

It should be no surprise that higher power costs will eventually lead to changes in the way new buildings are configured. In Europe and the Pacific Rim countries, rising power costs and tighter supplies have led to installation of photovoltaic glazing, wider use of natural ventilation and lighting, and more sophisticated building control systems than previously seen in those areas. The trend is likely to occur in the U.S. as well.

Is our future getting hot?

Regardless of whether or not one believes that global warming is caused by the burning of fossil fuels, there is little doubt now that it is happening. The question is no longer if the weather is changing, but rather how quickly and by how much.

During a recent trip to Australia, I was startled by the cooperation occurring between local government and industry over construction of a new sea wall. They had concurred that the structure should be able to withstand the torrents of seaborne wind and water during the worst storm likely to occur over the next 50 years. Because climatologists had forecast both a rising sea level and more severe storms than the area had encountered in the past, a better-safe-than-sorry philosophy directed the seawall to be larger than anyone had previously thought necessary. The discussion eventually got around to how such a structure could be made architecturally appealing, in spite of its enormous size, length, and cost.

As accommodation of global warming replaces skepticism and denial, we should expect other changes to the way outdoor facilities are designed. Those whose property was unexpectedly flooded during Hurricane Andrew have likely considered how higher-capacity drainage systems might have prevented such once-in-a-generation destruction. Developers of properties that will still be in use in 2020 may wish to sharpen their vision of such a future and ensure that their buildings are ready for it. ■

Due to an error in Mr. Audin's February 2001 column ["Soothing the Pain of Soaring Power Prices," page 195], independent system operators (ISOs) were incorrectly identified as companies that produce power. ISOs are federally chartered nonprofit agencies that oversee access and tariffs for high-voltage transmission lines that interconnect utilities. Independent power producers (IPPs) own power plants and produce power. We apologize for the error.

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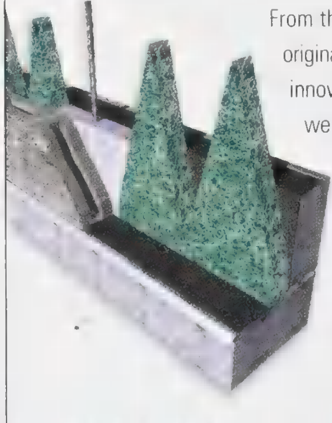

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CIRCLE 323 ON INQUIRY CARD

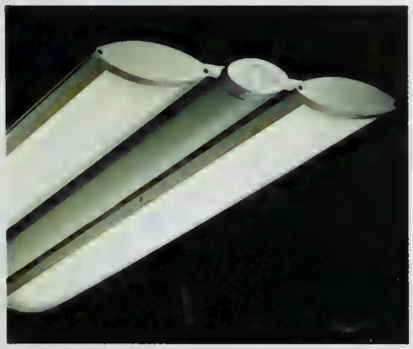
Lighting Briefs

◄ Concave classic

Flos has worked with Achille Castiglioni since the inception of the company in 1962. In that year, the company introduced the Arco, Taccia (shown), and Toio lights. The Taccia table lamp provides reflected light from a concave, spun-aluminum reflector with a matte white finish. Light is adjusted by positioning the blown-glass diffuser. The base is extruded aluminum in a matte black finish. 516/549-2745. Flos USA, Huntington Station, N.Y. **CIRCLE 200**

► Keeping a low profile

Ledalite's Soleo LP steel luminaire offers a low-profile look for interiors. In addition to white, Soleo LP is available with a natural steel housing finish, highlighted by translucent endcaps available in seven colors. This small-scale fixture is available with a nine-day, quick-ship program and with a T5 high output or two T8 lamp option. 604/888-6811. Ledalite Architectural Products, Langley, B.C., Canada. **CIRCLE 202**



◄ Fine import

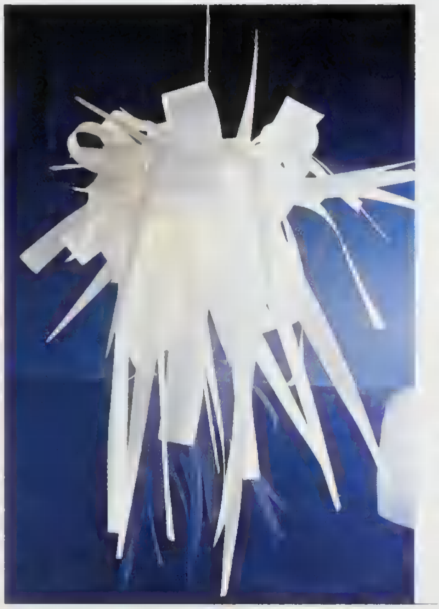
Slide is a new indirect/direct lighting import featuring a repeating oval shape and a slim profile. Designed for applications in lobbies, conference rooms, and private offices, Slide also performs in large, open environments. It is available in ceiling-suspended and wall-mounted versions. 773/247-9494. Focal Point LLC, Chicago. **CIRCLE 204**

► Alternative view

Lightolier introduces nine additions to the Alter Soft Lights series of indirect/direct lighting products. The luminaires feature high-efficiency sources, such as Bi-Tube, Triple Tube, Quad Tube, and linear T5 and T8 fluorescent lamps. The lights offer easy access to lamps and ballasts and are compatible with a selection of electronic dimmers and electronic dimming ballasts. Alter Windows Recessed (shown above) has a gently curved, square lamp shield. 800/215-1068. Lightolier, Fall River, Mass. **CIRCLE 205**

► Compact color changer

The Exterior 200 from Martin is a compact 150-watt, short-throw CMY color changer in a weatherproof housing. Equipped with a long-life 6,000-hour lamp, the Exterior 200 can be tucked discreetly into the architectural design details of buildings or any other illumination structure. The light features a built-in light sensor, memory presets, and smooth color mixer. Martin's system software offers flexible color programming, as well as a wide variety of color presets for creative and simple color composition. 954/858-1800. Martin Professional Inc., Sunrise, Fla. **CIRCLE 201**



◄ No sleep...till Brooklyn

Trained as an architect in Venezuela, Alejo Ruocco studied furniture design in Paris, collaborated with various European studios, and spent two years working for Gaetano Pesce in the U.S. The first collection for his new venture, It's an Object, is lighting that manipulates rough materials, such as fiberglass paper, clips, wood sticks, and bare bulbs. Handmade in Brooklyn, the lamps are currently available in design shops in New York. 718/499-7360. It's an Object, Brooklyn, N.Y. **CIRCLE 203**

► Star gazing

Bruck Lighting Systems recently acquired the LED division from CCI Lighting. With this acquisition, Bruck presents the Orion M Series, which utilizes an MR16 housing with LEDs in a variety of static colors: amber, green, blue, red, and white. The series has up to 100,000 hours of lamp life and can reduce energy costs by as much as 90 percent compared to a standard MR16 halogen lamp. The series is designed to handle strong vibrations and extreme ambient-temperature applications. 714/424-0500. Bruck Lighting Systems, Costa Mesa, Calif. **CIRCLE 206**

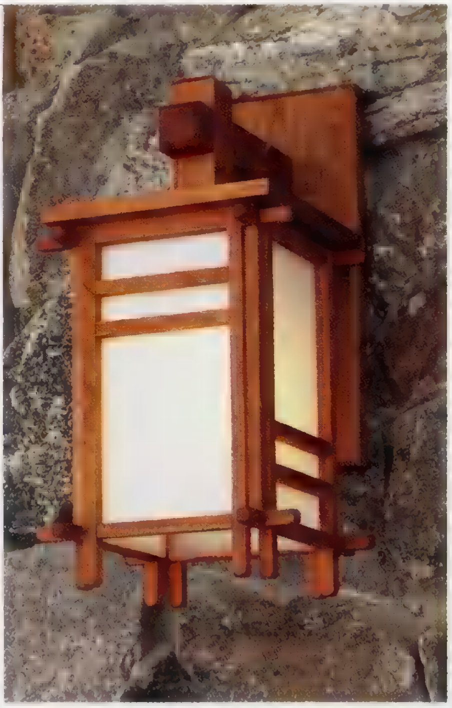
Lighting Briefs

► I vant to light your room

Designed by Mario Barbaglia and Marco Colombo, Draco is a flush mount fixture that can be mounted on the wall or ceiling. The fixture is made in opal white glass with a prismatic diffuser and a chrome ring. Draco is available in 11-inch and 15-inch diameters, with a choice of incandescent or fluorescent lamping. Both sizes are ADA compliant, and the lights are pending UL-listing. 203/407-8000. Il America Inc., Hamden, Ct. **CIRCLE 272**

▲ Linear fluorescent family

MagneTek has a new line of high-efficiency electronic ballasts for use with T5 lamps. The lightweight, thin-profile ballasts are designed for one- and two-lamp operation with models available for T5 and T5/HO lamps ranging from 14 to 54 watts. Applications include indirect, pendant mount, wall and surface mount, cove, undercabinet, and task lighting. The ballasts feature a small cross-sectional area and a one-inch profile height for flexible fixture design. 615/316-5146. MagneTek, Nashville. **CIRCLE 274**

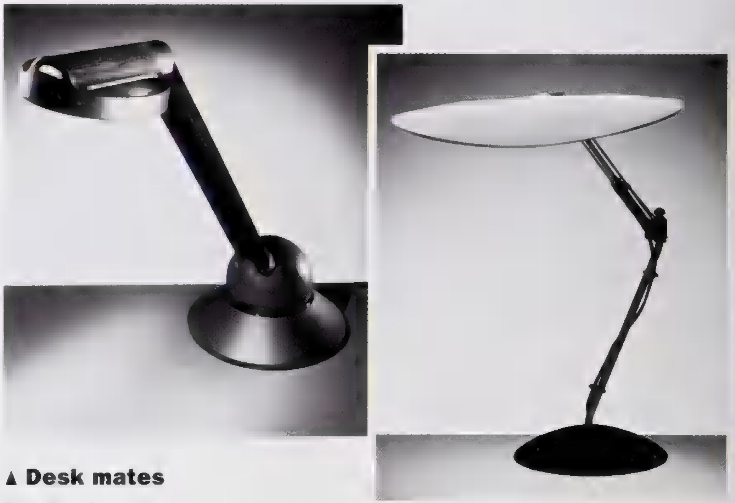


► Warm welcome

The Aurora Wall Mount is a new line of hardwood outdoor lighting from Cherry Tree Design. The outdoor lights are an addition to Cherry Tree Design's line of interior lighting and shoji screens. The fixtures are offered in natural cherry with a pearl glass shade. The wood is protected by a waterproofing sealant that contains UV protection and maximum resistance to mildew and graying. 800/634-3268. Cherry Tree Design, Bozeman, Mt. **CIRCLE 276**

► Under achiever

Xenix miniaturized linear undercabinet lighting provides dimmable incandescent lighting for office workstations, reception desks, nurses stations, display cases, and kitchen counters. The system comprises 12-inch units that house five 10-watt long-life Xenon lamps. Each Xenix module links together via tiny plug-in connectors, creating continuous rows of low-profile horizontal (or vertical) illumination. All Xenix units have power feeds that can be specified for hard wiring or portable, plug-in six-foot power cords. 847/451-0700. Alkco, Franklin Park, Ill. **CIRCLE 273**

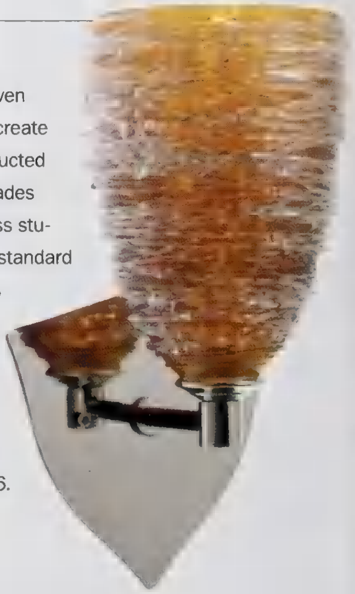


▲ Desk mates

The Mind Sweeper desk lamp and the Wing Lamp are new additions to Haworth's Jump Stuff collection. Mind Sweeper (left), designed by Pablo Pardo, is a desktop lamp that sits on a weighted, spherical base. The light can be rotated up to 90 degrees in either direction and can be extended from 20 inches to 26 inches in length. When not extended, the aluminum skeleton of the lamp is hidden by a soft, silicon rubber body. The height-adjustable Wing Lamp (right), designed by Luxo Corp., was created to focus light on a specific task, while reducing glare. 616/393-3000. Haworth Inc., Holland, Mich. **CIRCLE 275**

► Bee attractive

The small threads of crystal-clear glass woven around the Nest light's blown-glass shade create a rich texture similar to the carefully constructed homes of birds or insects. The art-glass shades are made by a San Francisco Bay Area glass studio exclusively for 2thousand degrees. The standard Nest pendant is 4½ inches wide by 7 inches high, and the Nest sconce is 4¾ inches wide by 9¾ inches high. The large Nest pendant measures 7 inches wide by 12 inches high, and the large Nest sconce is 8 inches wide by 15 inches high. Several metal finishes are available. 866/234-2086. 2thousand degrees Inc., Richmond, Calif. **CIRCLE 277**



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Lighting Briefs

▲ LEDing the way to decorative lighting

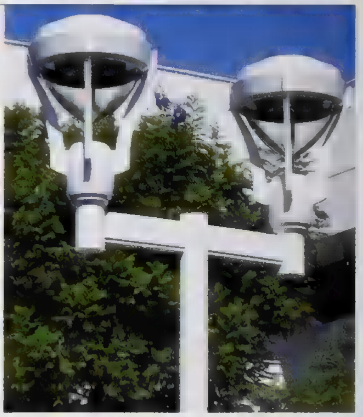
LEDtronics introduces the latest generation of DecorLED direct incandescent replacement lamps. With a power draw of just 1.0 to 1.7 watts, an 11-year LED operating life, and six sunlight-visible colors from which to select, solid-state DecorLEDs provide architects and lighting professionals with the means to integrate ornamental illumination into maintenance-intensive applications. A molded polycarbonate, UV- and shatter-resistant globe protects the LED cluster from the environment. 800/579-4875. Ledtronics Inc., Torrance, Calif. **CIRCLE 207**

▲ T8 is enough

Ushio introduces a new family of Ultra 8 fluorescent lamps that can reduce energy costs with savings of up to 40 percent, providing an alternative to standard T12 lamps. Ushio's full range of T8 fluorescents is available in 17-watt, 25-watt, and 32-watt models with color temperatures ranging from 3,000K to 5,000K. Recommended applications include lighting for retail stores, hospitals, office interiors, bank lobbies, auto showrooms, restaurants, factories, and schools. 800/838-7446. Ushio America Inc., Cypress, Calif. **CIRCLE 208**

► It stands alone

With a luminous top that does not reduce area-lighting capability, the Solitaire lamp, inspired by lantern-style gas luminaires, can take on a more traditional look. A lower white acrylic lens combines with this top to produce a jewel-like appearance. An induction fluorescent lamp option provides 10,000 hours of trouble-free operation and instant-on capability. 626/968-5666. Kim Lighting, City of Industry, Calif. **CIRCLE 209**



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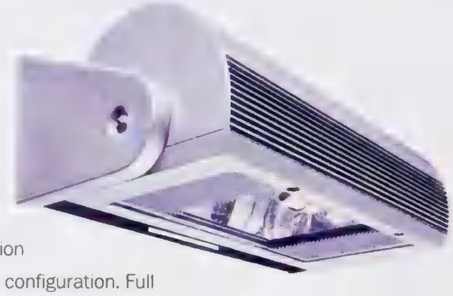
Lighting Briefs



► Full cutoff lighting
Lithonia has introduced the new WFL series of architectural wall-mounted luminaires. The WFL offers a full range of rotation and reversible-mounting capabilities for easy orientation in either a lens-up or lens-down configuration. Full cutoff lighting can be achieved in the down configuration, while the up configuration enhances wall textures and specific architectural features. The WFL is suitable for indirect, accent, and wall-mounted floodlighting applications. 770/922-9000. Lithonia Lighting, Conyers, Ga. **CIRCLE 210**

◄ Rectangular recessed
BEGA introduces a series of rectangular, recessed wall luminaires featuring high-output orientation lighting for steps, walks, and paths. The light source is redirected through a slotted die-cast aluminum faceplate that is enclosed by clear, tempered glass. 805/684-0533. Bega/US, Carpinteria, Calif. **CIRCLE 212**

▼ Path finder
Teka Illumination's miniature beacon path light is manufactured of pure copper, brass, and stainless steel. The luminaire is eight inches in diameter, U.L-listed for wet locations, and utilizes a 35-watt low-voltage lamp for connection to a remote 12-volt power system. The series can be provided in natural copper or nickel plate. 805/434-3512. Teka Illumination, Templeton, Calif. **CIRCLE 211**

▲ Take some sun
Coinciding with the launch of Solatube's commercial division is the introduction of its SolaMaster series of tubular skylights, a line specifically designed for a variety of configurations in commercial buildings, including suspended-ceiling systems, finished drywall ceilings, and open warehouse specs. The 21-inch unit provides up to 12,000 lumens and illuminates up to 400 square feet. 760/597-4400. Solatube Intl. Inc., Vista, Calif. **CIRCLE 213**

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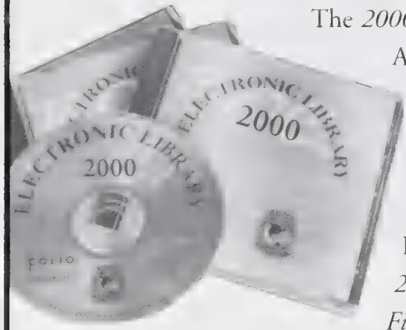

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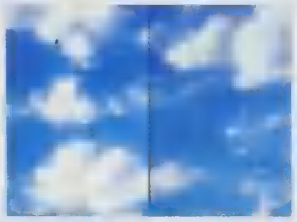

This actual photograph through Pilkington Solar E Glass *(right)* and without any glass *(left)* demonstrates Solar E Glass' clear aesthetics.

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CIRCLE 325 ON INQUIRY CARD

Lighting Briefs

▼ Precision floodlighting

Oculus is a precision lighting system available in small and large models. The lamp features a parabolic reflector system and axial lamp orientation and is suited for wall-, ceiling-, pole-, or floor-mounting configurations for interior and exterior settings. Oculus comes in metal-halide, compact fluorescent, and par lamp options. 714/994-2700. Architectural Area Lighting, La Mirada, Calif. **CIRCLE 214**

◄ Bullet-shaped fixture

Corona, a pole-top or building-mounted architectural accent luminaire, has an inverted illuminated louver near the top, which delineates the top from the shaft while emitting a soft wash of glare-free uplight. Corona is made of a durable die-cast aluminum housing with a baked enamel finish. 714/668-3660. Architectural Landscape Lighting, Santa Ana, Calif. **CIRCLE 215**

► One for the road

Metrolux designed the traffic-monitoring/security camera lowering device for integral use with all outdoor high-mast lighting poles. It is ideal for a range of area-lighting applications, including primary and secondary roads, bridges, tunnels, overpasses, public and private campuses, and prisons. The device allows traffic or security cameras to be readily mounted to a high-mast lighting system, permitting an unrestricted field of view while providing the same easy access to cameras associated with high-mast lighting fixtures. 847/451-3258. Metrolux Lighting, Franklin Park, Ill. **CIRCLE 216**

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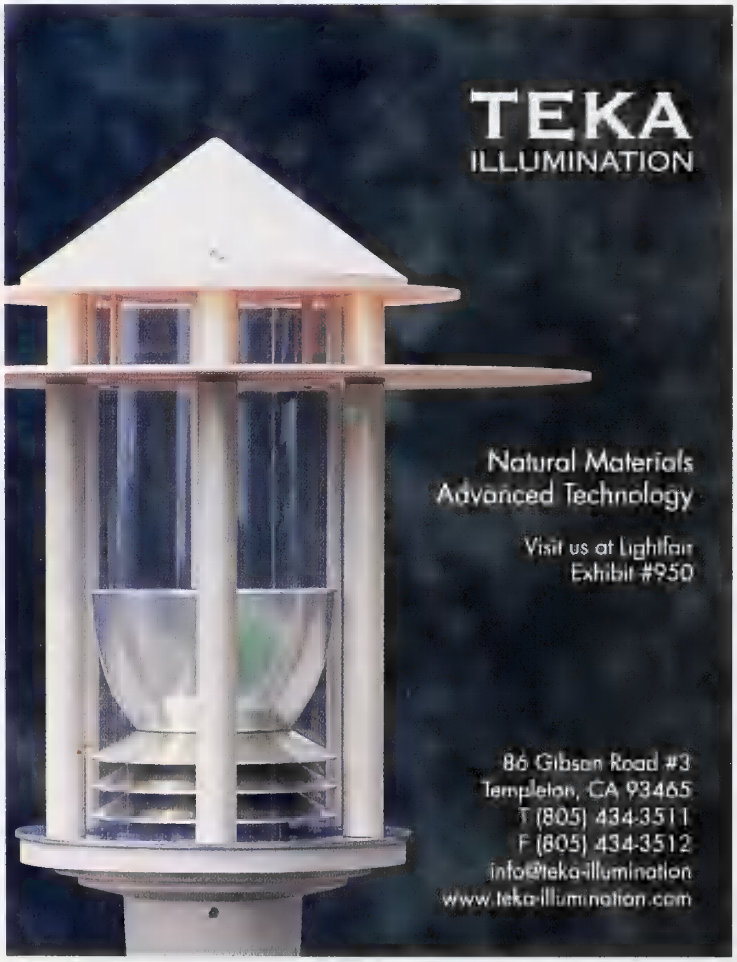
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The HardyPanel. Shear wall now sold by the foot.

The HardyPanel, the steel shear wall system that's taken the industry by storm, is now available in 12" and 24" widths.

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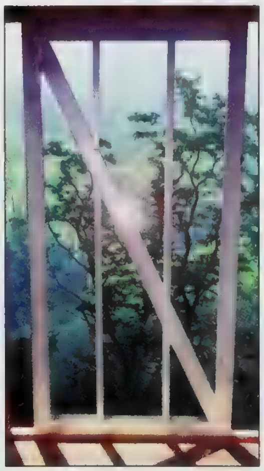

And now, with The HardyFrame System in 12" and 24" widths, even greater design solutions are possible.

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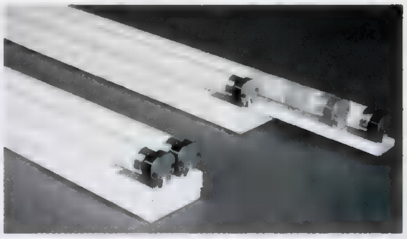
Lighting Briefs

► Two-lamp linear fixture



Available for both T5 and T8 linear fluorescent lamps in 120 or 277 volts, the staggered two-lamp linear fixture can be adjusted to varied spaces. The sliding adjustment feature locks into place with the turn of a screw, permitting lamps to overlap and eliminating socket shadows. The T5 comes with a high-output ballast option, while the T8 is available with a high-output, emergency, or dimming ballast. 714/848-0892. Bartco Lighting, Huntington Beach, Calif. **CIRCLE 217**

► Penny saver

The new T8 Ultra Watt-Miser system from GE operates at only 30 watts, using 6 percent less energy than a standard T8. Incorporating GE's exclusive Starcoat technology, the new T8 Watt-Miser has an 82 CRI (color rendering index) and ensures optimum color and light output. The system offers a three-year lamp and a five-year ballast warranty. 800/GE-LAMPS. GE Lighting, Cleveland. **CIRCLE 218**

◄ Thar she glows

The L209 Lighthouse bollard is a contemporary interpretation of a classic lighthouse design. The light is available in compact fluorescent and HID versions, and it is constructed in cast aluminum with a powdercoat finish in a range of colors and textures. 805/684-8626. LightForm+, Carpinetria, Calif. **CIRCLE 219**

▲ Halogen emergency lighting

Metrolite architectural halogen emergency lighting is now available through the Sure-Lites brand of Copper Lighting. The series includes five different models and a choice between output voltages of 6 or 12 volts, with either lead-calcium or nickel-cadmium batteries. Every unit provides dual voltage input of 120/277 VAC and electronics for line latching, low-voltage disconnect, and brownout operation. The unit employs a quick-mount universal back with hinged access. 912/924-8000. Cooper Lighting, Americus, Ga. **CIRCLE 220**

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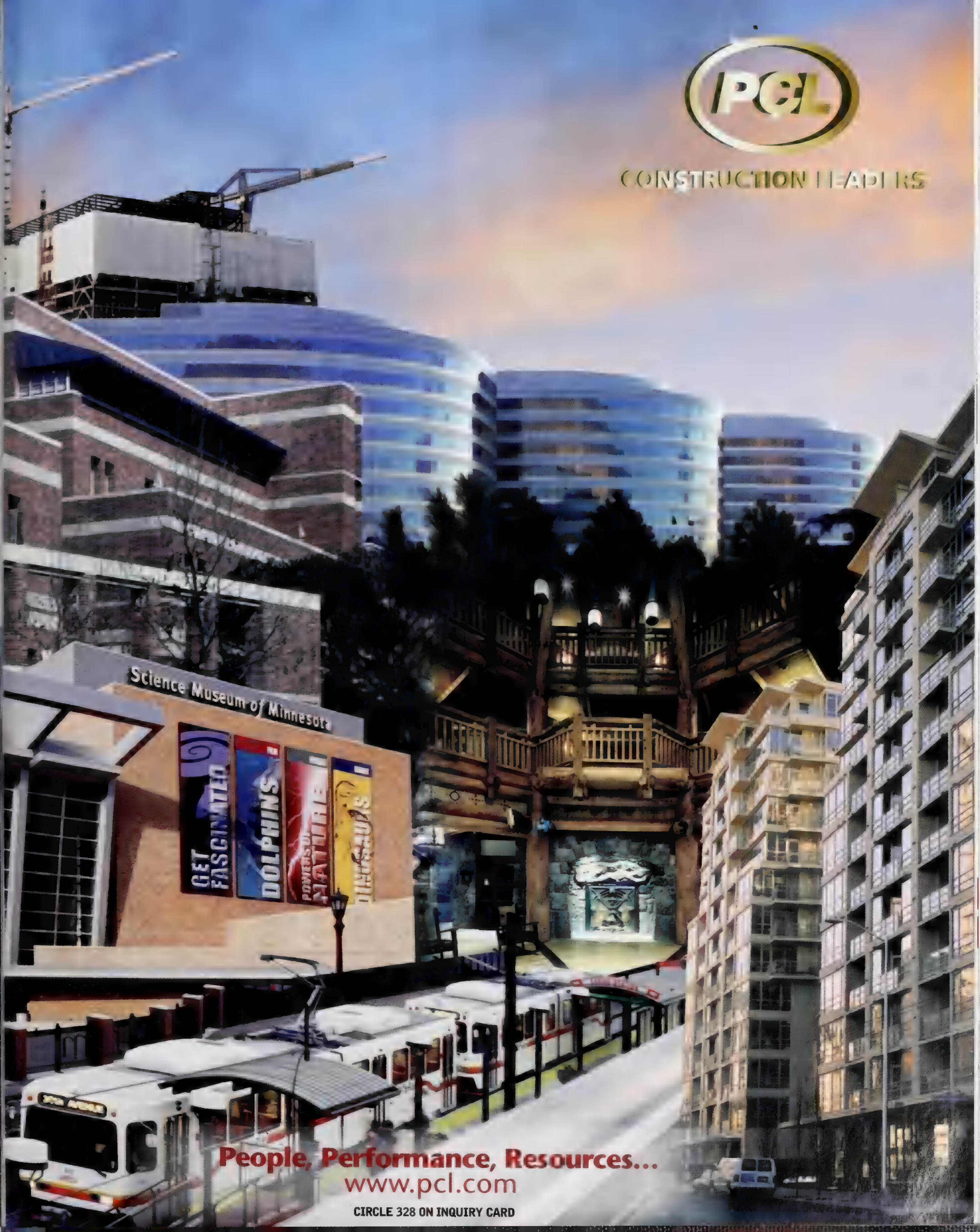

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New Products

While bold colors, patterns, and textures define the commercial carpeting offerings shown below, a successful carpet always has a combination of durability and aesthetics. Sustainability continues to be a major issue for the industry, and more and more products are touting their green pedigrees. *Rita F. Catinella*

Bold graphics and colors unify a tripartite carpet family

A new series of colorful, graphic carpets from the Interface family of companies will be introduced at NeoCon 2001. Prince Street's 501 Collection includes eight new styles in the 50-centimeter-by-1-meter rectangular-tile format. The collection, which features patterns such as Monsters under the Bed, Animal Talk, and Late Night TV, is a tribute to natural dyes and pigments, coarse and simple woven structures, tribal imagery, and ancient icons. New products from Interface Flooring Systems include the bright (or neutral) rainbow stripes of Chenille Warp carpet tiles. The tiles can be installed in one direction or quarter-turned for a parquet effect. Bentley's new offerings, Brabourne and Moorefield, are made from 100 percent postindustrial reclaimed 6,6 nylon and meet the LEED specification for recycled content. 800/5-PRINCE. Prince Street, Carterville, Ga. CIRCLE 221 706/812-6156. Interface Flooring Systems, La Grange, Ga. CIRCLE 222 800/423-4709. Bentley, City of Industry, Calif. CIRCLE 223

Left to right: Prince Street's Monsters, Prince Street's Animal Talk Collection, Interface's Chenille Warp, and Bentley's Brabourne.

Two broadlooms tie for a DuPont Antron gold award

In March DuPont Antron honored Atlas Carpet Mills, Monterey Carpets, and Prince Street in its third Product Innovation Award at a ceremony held in Los Angeles. The DuPont Antron awards recognize innovative new commercial carpet styles made of Dupont Antron nylon.

The judges were equally impressed with Contour from Atlas Carpet Mills and Monterey Carpet's Bukhara, and they selected both styles as gold award winners in the broadloom category. Contour, part of the Atelier collection by Atlas, is an undulating motif with deep dimensional effects inspired by light and shadow. Bukhara is a classic product modeled after traditional bouclé fabric texture. Special twist levels in the construction make the product appropriate for a variety of commercial settings with high traffic patterns. Pacificrest Mills was recognized with a silver award in the broadloom category for Meridian, and Masland Carpets was named the broadloom merit award winner for Patagonia.

In the modular category, Prince Street won the gold for Farm, a durable, stain-resistant product constructed of 100 percent DuPont Antron Lumena solution-dyed nylon. The unusual design of the product (50 centimeters by 1 meter) was created to make irregular installations easier and less wasteful. 800/458-4329. DuPont Antron Design Award, Atlanta. CIRCLE 224

Left: Contour by Atlas Carpet Mills. Above: Bukhara by Monterey Carpets.

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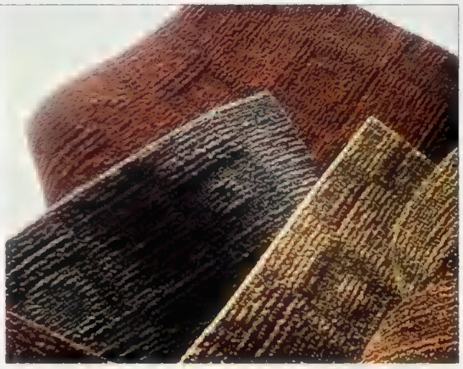
New Products

► Mesh well together

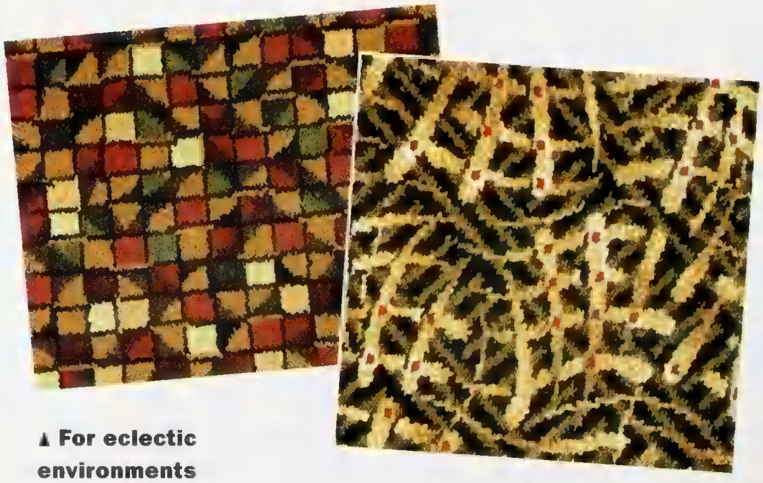
Mesh is the newest pattern from Invision Carpet Systems. Mesh is a small-scale, rectangular texture created in response to the design community's request for a densely tufted, textured loop to accentuate a variety of interiors. The pattern is available in 144 solid colors. 800/859-9558. Invision Carpet Systems, Dalton, Ga.

CIRCLE 225

► Color ranges



Inspired by the ancient city in the mountainous region of Andalusia, Spain, Medina provides a complex texture while maintaining a simple, geometric design. New from Bolyü, Medina is an interloop pattern durably constructed with DuPont Antron Legacy nylon in 16 colorways. 800/451-1250. Bolyü Contract, Adairsville, Ga. **CIRCLE 227**



▲ For eclectic environments

Ulster introduces Eclectic Elements, a collection of four designs and a coordinating border inspired by feng shui and the elements of nature. The collection is available in 12-inch widths and is composed of 80 percent wool and 20 percent nylon. Balance displays a grid pattern created by subtle changes of tone and color; Structure (above left) reflects the image of a structured kaleidoscope; Energy (above right) resembles "the bouncing pattern of electrons"; Harmony denotes classical curves supported by a geometric underlay; and Bridge is the coordinating contemporary geometric underlay. 770/514-0707. Ulster Carpet Mills Inc., Marietta, Ga. **CIRCLE 229**

▲ Birds of a feather

The Aves Collection, from Lotus/Peerless, was inspired by migratory birds. Aves, a 28-ounce interloop style, uses modern scroll technology to create a multilayered effect. The other patterns, Wings and Migration, feature a plumage-like design on a disciplined linear background. Wings employs the same tufting methods as Aves, while Migration features the identical pattern in a 38-ounce cut-and-loop construction. 800/451-1250. Lotus/Peerless Contract Carpet, Adairsville, Ga. **CIRCLE 226**

▲ Spinning a new yarn

Arras and Marché use a series of multicolor space-dyed yarns developed exclusively by the Monterey design team. These yarns combine both solids and barber poles to create individual product colorways that feature as many as 12 colors simultaneously. Constructed with cut pile-and-loop texture, these tufted products are crafted from Dupont Antron Legacy. 800/678-4640. Monterey Carpets, Santa Ana, Calif.

CIRCLE 228

▲ Loopy patterns

Gingham and Patchwork are two new Heirloom Series patterns by Blue Ridge Commercial Carpet. A modern take on the traditional cotton fabric, Gingham is a checked design with a multilevel loop. Patchwork, also a multilevel loop, creates a classic, quiltlike background. Both patterns are offered in 25 color combinations and are made from 100 percent Dupont Legacy nylon with Dura Tech for optimum performance. 770/479-8280. Blue Ridge Commercial Carpet, Ellijay, Ga.

CIRCLE 230

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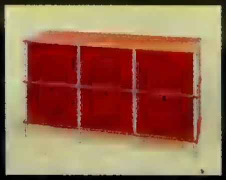

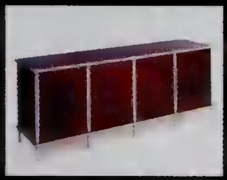

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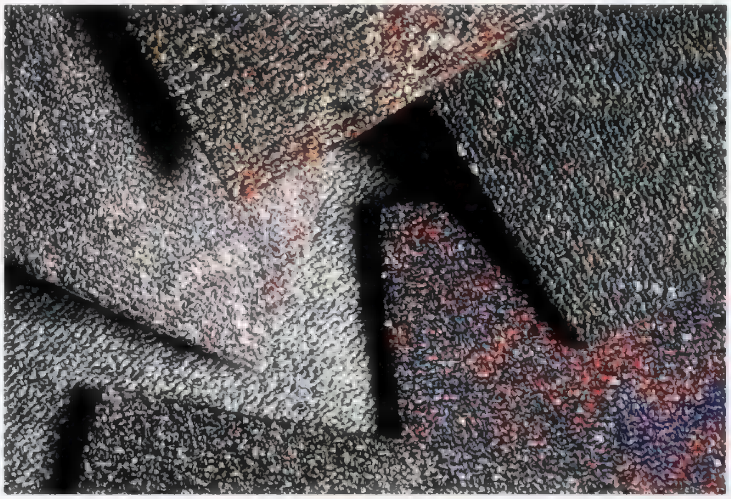
New Products

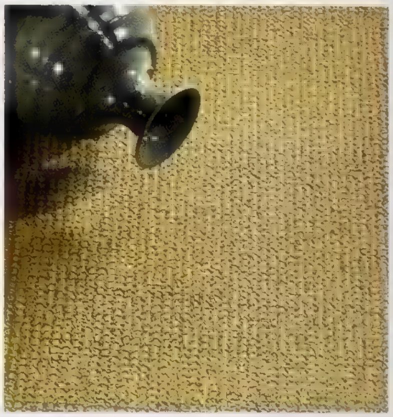


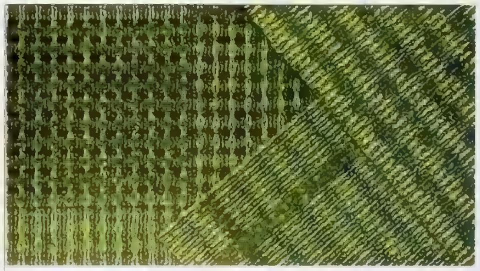
▲ Reliable backing

Designed for rigorous contract environments, High Performance backing from Mannington is available in 9- and 12-foot widths for tufted broadloom carpet. With High Performance, broadloom products such as Carthage III (pictured) will be impervious to moisture damage, even at the seams. The backing meets the standards for the Carpet and Rug Institute's indoor-air-testing program and contains 25 percent recycled content. 800/241-2262. Mannington Commercial, Calhoun, Ga. CIRCLE 231

► Textured sisal

Connect is a small-scale, textured pattern fabric that can work in a variety of commercial interiors, including private offices and lobby areas. J&J Commercial has created Encore SD Ultima, a new generation of fiber that has a minimum of 15 percent recycled nylon content and lifetime fiber-performance warranties for stain removal, wear, colorfastness, and static. 800/241-4586. J&J Commercial, Dalton, Ga. CIRCLE 232





▲ Life patterns

The detailed stitching found in turn-of-the-century Amish quilts served as an inspiration for Brisbane, Melbourne, and Sydney, three new styles in Pacificrest Mills' Big Cities Collection. Like the symmetrical structure of a quilt, or city streets laid out on a grid, all three have clean and pure geometric patterns. The carpets are all recyclable products, part of Pacifcrest's One Earth, One Chance program. 800/522-8838. Pacificrest Mills, Irvine, Calif. CIRCLE 233

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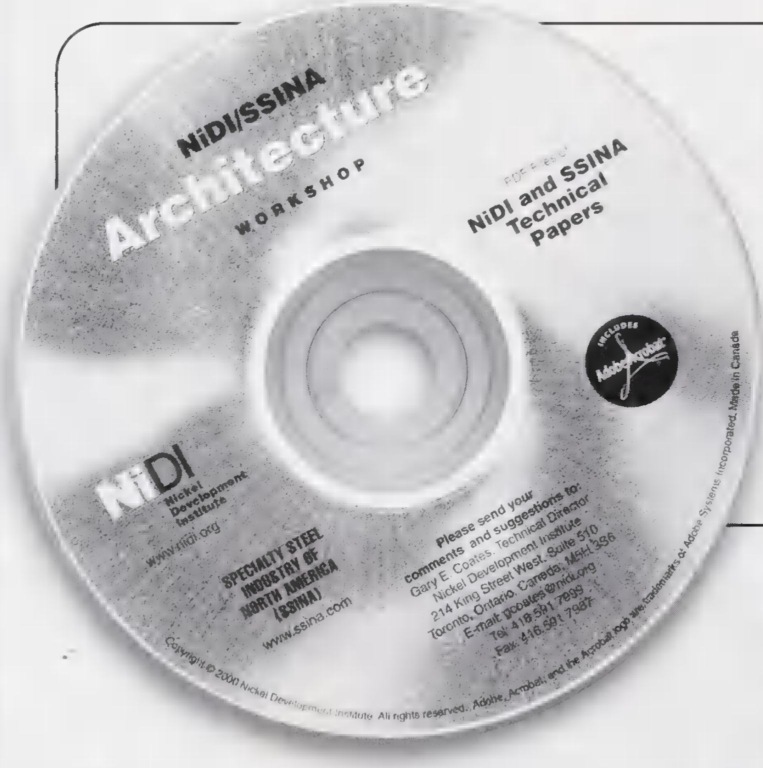
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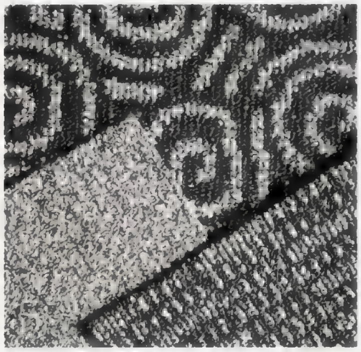
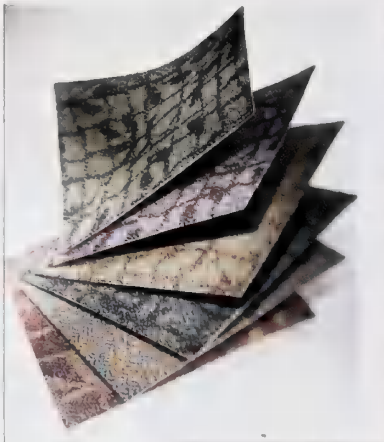
New Products



◄ Learning curve

Lees introduces the .Edu Collection comprising Faculty IV, a multicolor cut-and-loop product; Honors Class, a large-scale curvilinear pattern; and Ph.D., a medium-scale grid with a linear aesthetic. The 12-foot broadloom products are ideal for education, corporate, and healthcare markets. 336/379-2000. Lees Carpets, Greensboro, N.C. **CIRCLE 234**

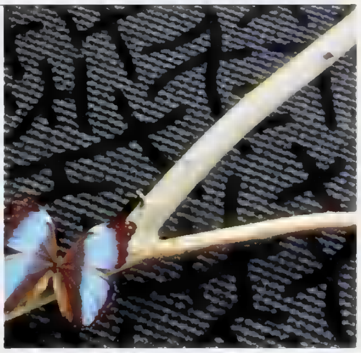


◄ Healing patterns

With pattern names such as Aura, Qi, Shaman, and Amulet, Medscapes soft-surface floorcovering was created especially for the healthcare industry. An alternative to the hard surfaces commonly used in healthcare, Medscapes offers advantages such as reduced slips, noise reduction, ergonomics, and moisture management. A fully sustainable backing system called Ecoworx 6 contains no PVC or chlorine. 877/502-SHAW. Shaw Industries Inc., Dalton, Ga. **CIRCLE 235**

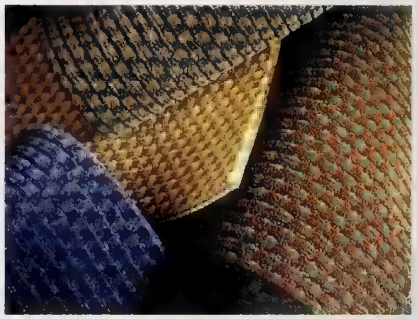
► Encore performance

An alternative to discarding old carpet in landfills, the Earth Square renewable carpet program is a three-step closed-loop recovery process. This process cleans, retextures, and rejuvenates used modular carpet with contemporary designs at a cost lower than purchasing new carpet tiles. 800/241-4826. Milliken Carpet, LaGrange, Ga. **CIRCLE 236**



► Revolutionary spirit

Revere is a small-scale, textured cut/loop product crafted with BASF Zeftron 2000 nylon in 14 solution-dyed colorways. Revere is suited for corporate, retail, institutional, and hospitality environments. 800/451-1250. Cambridge Commercial Carpets, Adairsville, Ga. **CIRCLE 237**



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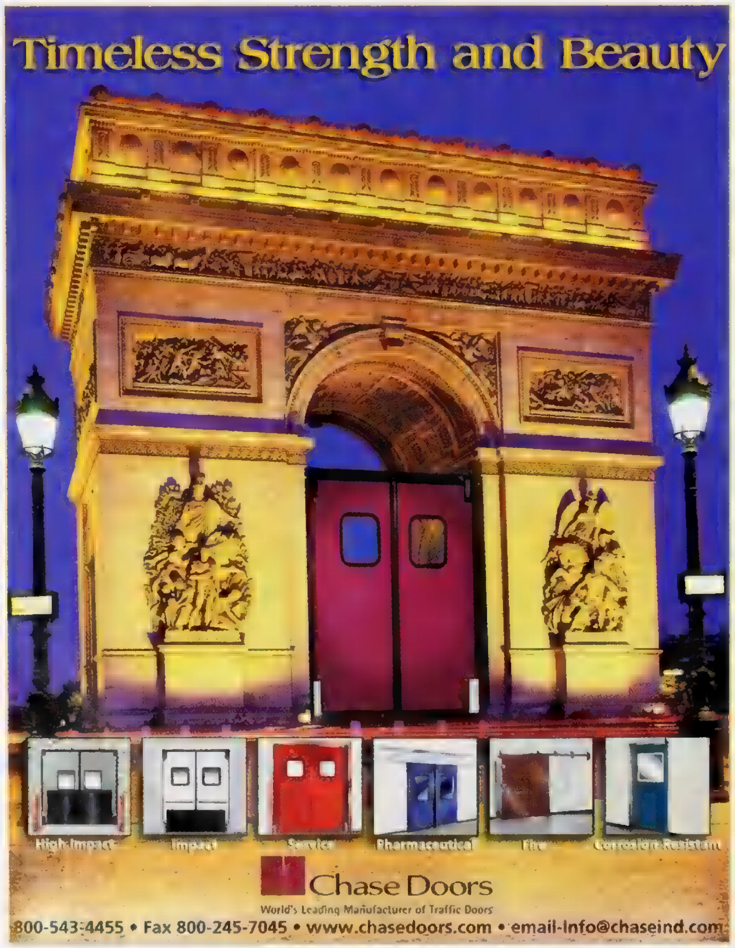

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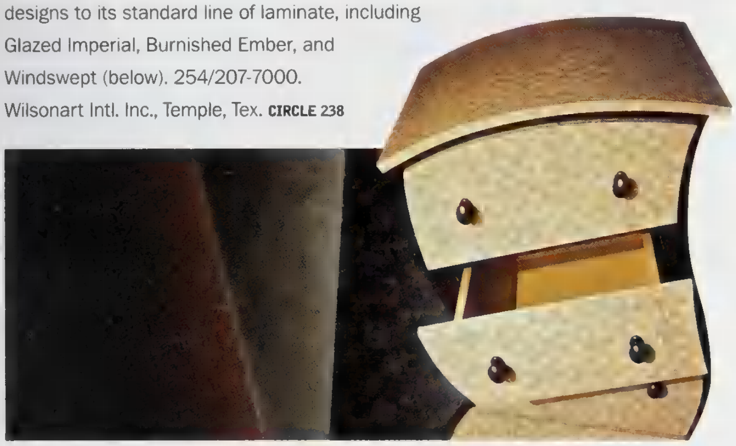
Product Briefs

▾ Laminate cabinet

The Furniture Society is a nonprofit organization consisting of 1,000 North American furniture artists, curators, interior designers, and architects. For the Wilsonart International/Furniture Society Invitational in Toronto, 12 society members specializing in furniture artistry each designed a piece of contemporary furniture using Wilsonart laminate. Shown here is Judson Beaumont's Rosita Cabinet in Gilded Marquetry and Heirloom Marquetry. Wilsonart has added 32 designs to its standard line of laminate, including Glazed Imperial, Burnished Ember, and Windswept (below). 254/207-7000. Wilsonart Intl. Inc., Temple, Tex. **CIRCLE 238**

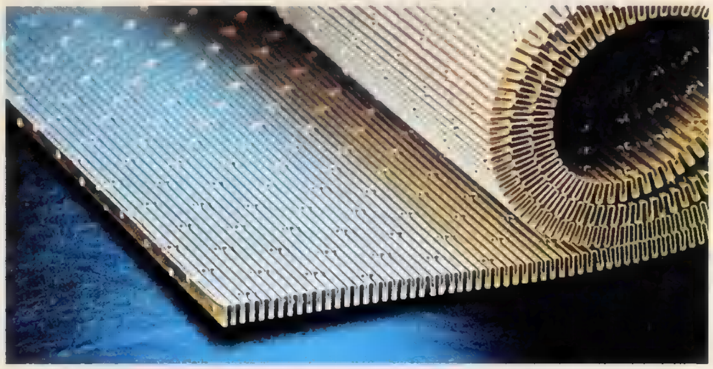


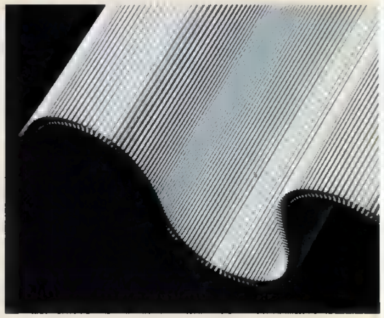
▸ Ice cubes

GE offers a new line of compact refrigerators in unusually bright colors, including grape, blueberry, kiwi green, tangerine, and cherry red. Handy for college dorms, the office desk, or the wet bar, the compact fridges offer 1.7-cubic-foot capacity—1.5 cubic feet for fresh food and .2 cubic feet of freezer space. Each cube fridge has a full-width slide-out cabinet shelf, 1½ door shelves, a utility bin, and a mini ice tray. 800/626-2000. GE Electric Company, Louisville. **CIRCLE 240**

◂ Aluminum door options

The Alumina aluminum door line includes 10 different profiles and three glass options. Each door is custom-made to specification, including predrilled holes for hinges, locks, handles, and knobs. The doors can be used for kitchens, closets, baths, or the office. A variety of sliding door panels and partitions, from lightweight to heavy-duty, is also available. 336/668-0635. Exact Finish Inc., Greensboro, N.C. **CIRCLE 241**

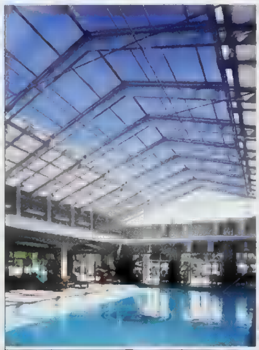




Product of the Month

Aero

Offered exclusively by Surfaces+, a Forms+Surfaces company, Aero consists of tightly corrugated, anodized aluminum sheets that are flexible and formable. Crisp folds cast deep shadows, while variations in thickness, depth, and rounded or square return edges produce different designs. Artfully aligned, precision-engineered perforations give Aero a breathable quality, as light and sound permeate the folds. Aero is ideal for a variety of interior applications—suggested uses include retail and display design, interior architectural accents, furniture design, and product design. Aero is sturdy and lightweight enough to be used for ceiling and wall panels and is malleable enough to be rolled like a carpet. 805/684-8626. Forms+Surfaces, Carpinteria, Calif. **CIRCLE 239**



▾ Let in some air

OpenAire specializes in retractable pool-roof enclosures and skylights. Although initially projects focused on pool enclosures (shown here), the project scope now includes water parks, atriums, restaurants, and even an observatory. The motorized roof panels retract to open up to 50 percent of the roof area. 800/267-4877. OpenAire, Mississauga, Ontario. **CIRCLE 242**

Product Briefs

▲ Woven window coverings

Conrad has added three new weaves to the company's line of handwoven window coverings. Mist and Monsoon feature smooth strands in pale or deep tones of gray, and Nimbus is a textural blending of hand-tied fibers from the coconut family. Large looms allow Conrad to be used on virtually any size and style of window. 415/626-3303. Conrad, San Francisco. **CIRCLE 243**

▼ Play it safe

A new line of playground equipment from Landscape Structures is based on the Arthur character of children's television and book fame. The line consists of two new play structures, Arthur's Town (for ages 2-5) and Arthur's Adventures (for ages 5-12), as well as 15 interactive play panels. All equipment is modular and can be configured to fit space, budget, and play requirements. 800/328-0035. Landscape Structures Inc., Delano, Minn. **CIRCLE 244**

▲ Trim and fit

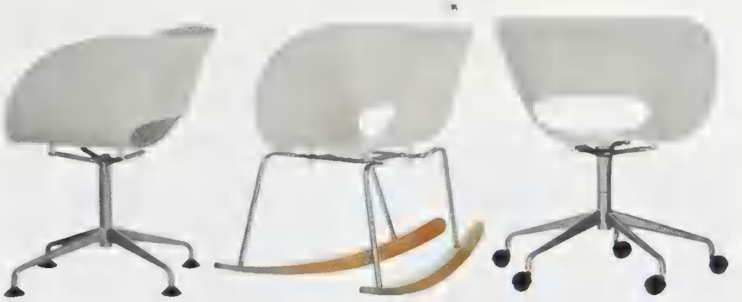
The 48-inch-wide side-by-side refrigerator/freezer (above left) will now be offered in a trim kit model or full overlay model, to blend in with the cabinetry if consumers so desire. The trim kit model features a visible handle and outer trim. The VUAR undercounter/freestanding refrigerator (above right) has special beverage shelves and a wine rack—each section maintaining a separate temperature. 888/845-4641. Viking Range Corporation, Greenwood, Miss. **CIRCLE 245**

For more information, circle item numbers on Reader Service Card or go to www.architecturalrecord.com Advertiser & Product Info

Product Briefs

◄ Industrial supplies

Sonrisa is increasing its focus on the adaptive reuse of stainless-steel furniture pieces originally designed for hospital, school, and other industrial uses. This reuse allows vintage food-service racks to become TV cabinets, narcotics cabinets to house fresh linens, and former dental cabinets to display treasured possessions. Details such as knobs, hinges, feet, and locks add to the industrial qualities. Medical cabinets, baker's racks, and nurse's desks offer low-maintenance solutions for a variety of residential and commercial interiors. 800/668-1020. Sonrisa Furniture, Los Angeles. **CIRCLE 246**



▲ Rock, twist, or roll

Ron Arad, designer of the original Tom Vac chair, has created three different base options for his original plastic shell. Tom Rock is mounted on a pair of varnished beech runners, Tom Twist provides a stationary four-prong base with a swivel mechanism, and Tom Roll features height adjustment, synchronized tilt, and a five-prong caster base. All can be used in the home or office. 212/539-1900. Vitra Inc., New York City. **CIRCLE 247**

◄ Brighter compositions

Designer Essentials is a new collection of 27 vinyl composition tile colors created in response to designers' requests for more rich and saturated accent colors, such as Ocean Blue, New Eggplant, Spectrum Orange, and Fuchsia. Mannington's entire VCT selection contains a minimum of 10 percent recycled vinyl content. 800/241-2262. Mannington Commercial, Salem, N.J. **CIRCLE 248**

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Product Briefs

◂ Harsh character

ChemArmor high-pressure laminates are resistant to more than 100 substances, including acids, solvents, bases, general reagents, as well as difficult stains, such as India ink. The product carries a Class 1 fire rating. 410/551-5000. Nevamar Decorative Products Div., Odenton, Md. **CIRCLE 249**

▴ Lucky charms

Luck Stone offers more than 280 stone materials to suit vertical or horizontal applications, including building stone (3 to 9 inches thick), thin stone (1 to 3 inches), wall stone (2 to 4 inches), flagstone, dimensional stone, granite, marble, aggregates, cobblestones, and boulders. Shown above is Sterling Rustic building stone. 800/898-LUCK. Luck Stone, Richmond. **CIRCLE 251**

▸ Better safe than sorry

Ostrich leather lining, an automatic winder for moonphase watches, direct connection to home or office alarm, and insurance provided by Hiscox of London are some of the features that put Stockinger's luxury, custom-made safes in the $60,000-$300,000 price range. In the 25 years Stockinger has been in business, there have been no losses from their safes, resulting in lower insurance premiums. 866/872-7233. Stockinger Safety First Class Ltd., New York City. **CIRCLE 250**

◂ Complete glass line

The complete line of Pilkington Texture Glass is now in stock in North America, including the three newest designs: Oak, Charcoal Sticks, and Digital. The 20 patterns incorporate various styles, textures, and obscurity levels. 800/868-4527. Coastal Glass Distributors LLC, Charleston, S.C. **CIRCLE 252**

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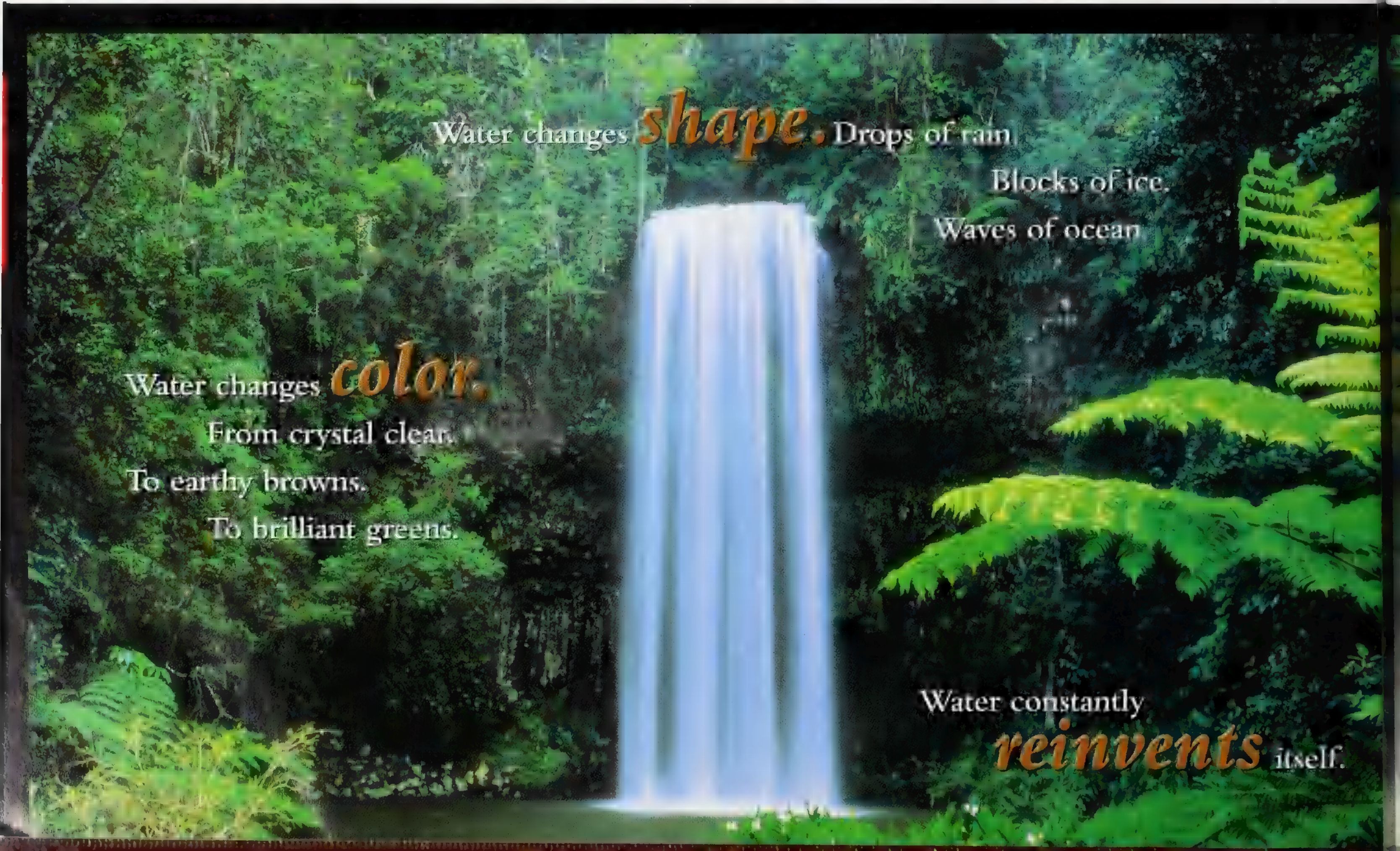
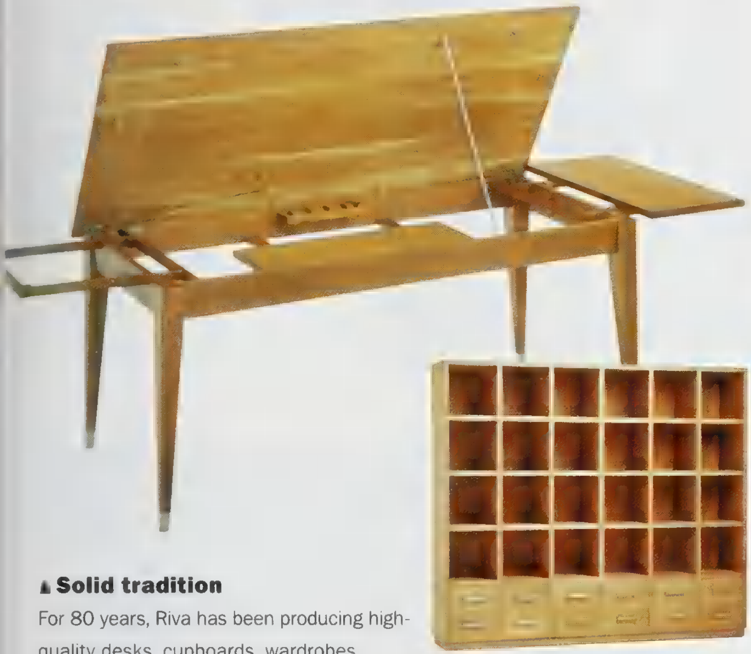


Product Briefs



▲ Solid tradition

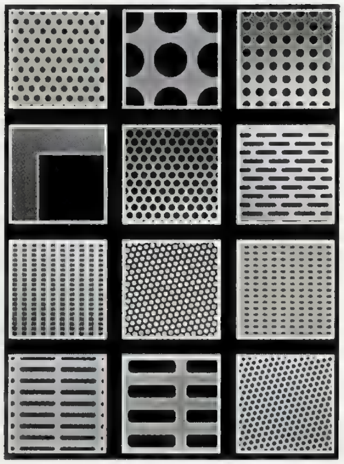
For 80 years, Riva has been producing high-quality desks, cupboards, wardrobes, bookcases, tables, chairs, and beds from American cherry, maple, and European oak. The Denver table (above left) features a system that allows for a 31½-inch extension of the worktop. The San Pietroburgo bookcase (above right) is available with a variety of drawer combinations. The cypress wood drawers have antimoth properties. 39/031 733094. Riva Industria Mobili, Cantú, Italy. **CIRCLE 253**

▲ ADA-compliant shower

Delta's new slide-and-grab bar combination features an ADA-compliant slide mechanism for easy adjustments. The one-function hand shower has a push-button and on-off control and utilizes a 69-inch flexible hose. The shower can accompany the Monitor pressure-balance unit with Scald-Guard valve. 800/345-DELTA. Delta Faucet Co., Indianapolis. **CIRCLE 255**

▼ Holey glass

PerforatedGlass is a new collection of architectural glass that is intended to look like perforated stainless steel but is actually a single unit of laminated safety glass. The collection uses opaque silver and gray tones in a trompe l'oeil pattern with the depth and dimension of real metal. Nine patterns are available, including small circles, large circles, ovals, slots, and grids. 800/275-7272. Cesar Color Inc., Phoenix. **CIRCLE 254**



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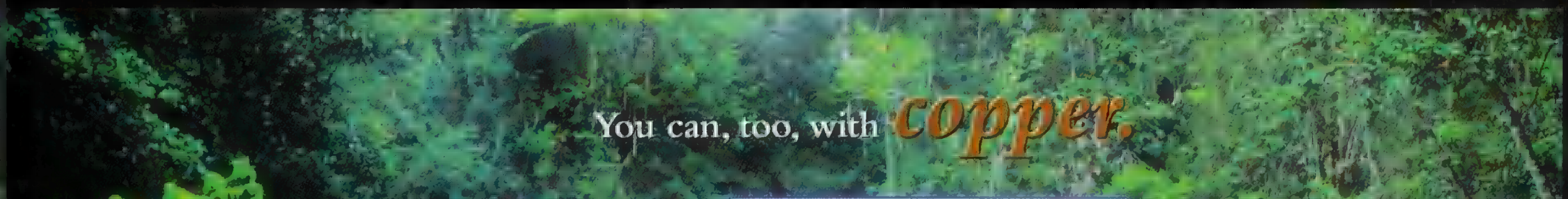

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Project: Robertson Branch Library
City of Los Angeles
Architect: Steven Ehrlich Architects

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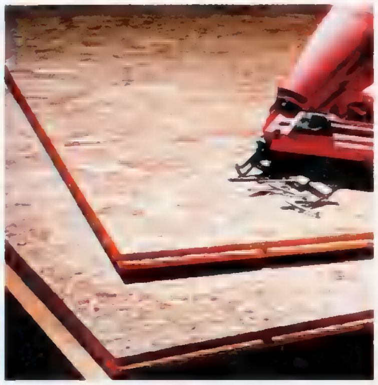
Product Briefs



◄ Smart subflooring
BarrierFloor HP flooring is treated with the SmartGuard Process that uses a borate-based, EPA-registered wood preservative to resist damage caused by termites and fungal decay. In addition, the flooring requires no sanding due to moisture absorption. 800/462-1238. Louisiana-Pacific Corp., Huntersville, N.C. **CIRCLE 256**

◄ Alternative to wood
USG's new Fiberock Brand Underlayment, Aqua-Tough, is a moisture-resistant residential flooring underlayment made from 100 percent recycled gypsum and cellulose. The resin-free panels can be used in both wet and dry areas of the home and are ideal for application under vinyl, ceramic tile, hardwood flooring, laminate flooring, and carpeting. 800/USG4YOU. USG Corp., Chicago. **CIRCLE 257**

► Safer setting
The Hansacobra is a touchless, infrared-activated basin faucet that features six-volt lithium battery operation along with temperature control that is designed to protect the user from scalding. The setting control allows users to set Hansacobra for continuous flow, intermittent flow, or permanent off. 678/334-2142. Hansa America Inc., Norcross, Ga. **CIRCLE 258**

► Doctor's orders
MechoShade Systems has been selected by Wellness, LLC, for their modular hospital-room systems. These rooms, which come as a total package, include MechoShade's ElectroShades system with translucent ThermoVeil 3000 series shadecloth. The shades provide solar protection, greater use of natural light, lower energy consumption, antimicrobial properties and privacy, without obstructing the view. 800/899-8081. MechoShade Systems Inc., Long Island City, N.Y. **CIRCLE 259**

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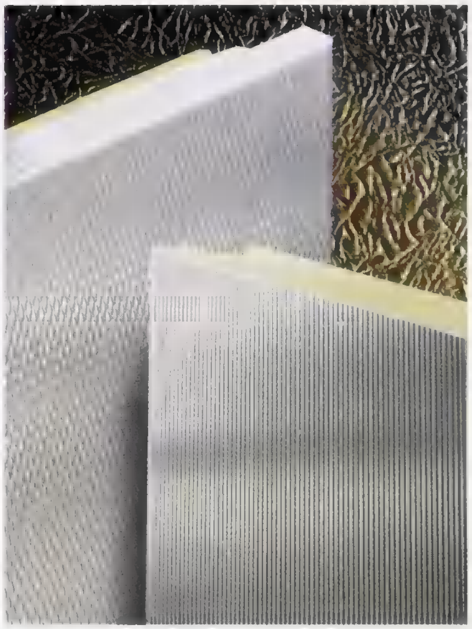
Product Briefs

► Well cast



The DuraCast finish system is one of the new finish options for the Formawall Dimension Series panels from Centria. The system is a shop-applied, 100 percent acrylic coating containing silica aggregate that provides the look and feel of precast concrete. Duracast is applied over a special polyester base coat, giving the system a high level of film integrity to protect the G90 galvanized metal substrate. Duracast finishes offer high resistance to abuse and abrasion and provide cost, weight, and lead time benefits compared with precast. Duracast finishes are available in eight standard colors, matched to popular colors in the Centria Colorstorm palette. 800/759-7474. Centria, Moon Township, Pa. **CIRCLE 260**

► Green guards

Nu Tree wall guards are manufactured from recycled post consumer No. 2 plastic containers, extending the life cycle of the plastic. Available for interior and exterior applications, the wall guards are suited for heavy-abuse areas, such as loading docks and back areas in the back of the house. The guards have a wood texture and are available in dark gray, black, and caramel. 800/222-5556. InPro Corporation, Muskego, Wis. **CIRCLE 261**

▼ Unitized curtain-wall system

Mellon Client Service Center, in Pittsburgh, is one of the first buildings to showcase Wausau's new factory-assembled, preglazed, unitized curtain-wall system. The curtain-wall units are erected by stacking individual panels vertically and horizontally, resulting in a four-way stack-joint design. With this method, less handling is needed for each unit, thus decreasing opportunities for a mishap. 877/678-2983. Wausau Window and Wall Systems, Wausau, Wis. **CIRCLE 262**

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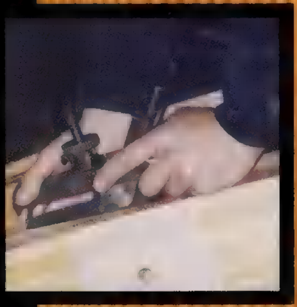
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Product Literature

Fluorescent and downlighting

H.E. Williams has issued new fluorescent and Infinity downlighting binders that include all product specifications. 417/358-4065 ext. 246. H.E. Williams Inc., Carthage, Mo. CIRCLE 263

Wood wallcovering catalog

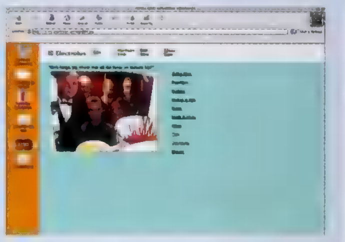
A new catalog featuring the latest selection of SanFoot flexible wood wallcovering is now available. The SanFoot line contains more than 20 species of real wood veneers suitable for interior applications, including residential, commercial, hospitality, retail, and more. 800/225-6384. Jacaranda Inc., Miami. CIRCLE 264

Staining hardwood CD

The Hardwood Council has developed a new CD-ROM specifying tool, *The Finishing Touch*, that allows users to apply stain variations to photos of 21 North American hardwood species (such as oak, maple, hickory, and cherry). Users also can apply stain hues to room photos that include hardwood flooring, millwork, molding, and cabinetry to see how stain affects the look of various hardwoods. 412/281-4980. Hardwood Council, Oakmont, Pa. CIRCLE 265

NEW SITES FOR CYBERSURFING

A Swedish family fridge is a portal to the web **www.electrolux.se/node384.asp**



Stone-coated steel roofing products **www.decra.com**

Edison Price's catalog sheets, product photos, photometric files **www.epl.com**

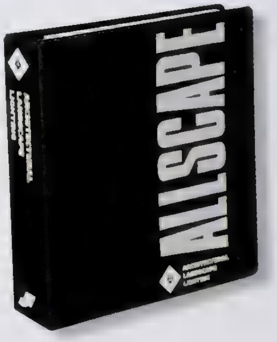
Columns, railings, and fences **www.superioraluminum.com**

National Roofing Contractors Association's new site **www.nrca.net**

New lighting binder

Architectural Landscape Lighting, Inc., a manufacturer of high-performance, pedestrian-level lighting solutions, has announced the availability of its new Allscape binder. The two-inch, three-ring binder features the current Allscape catalog of contemporary-design outdoor luminaires, including landscape lights, step lights, floodlights, bollards, and more. 714/668-3660. Architectural Landscape Lighting, Santa Ana, Calif. CIRCLE 266

The Finishing Touch
A Guide to Specifying North American Hardwood Species and Finishes
The Hardwood Council



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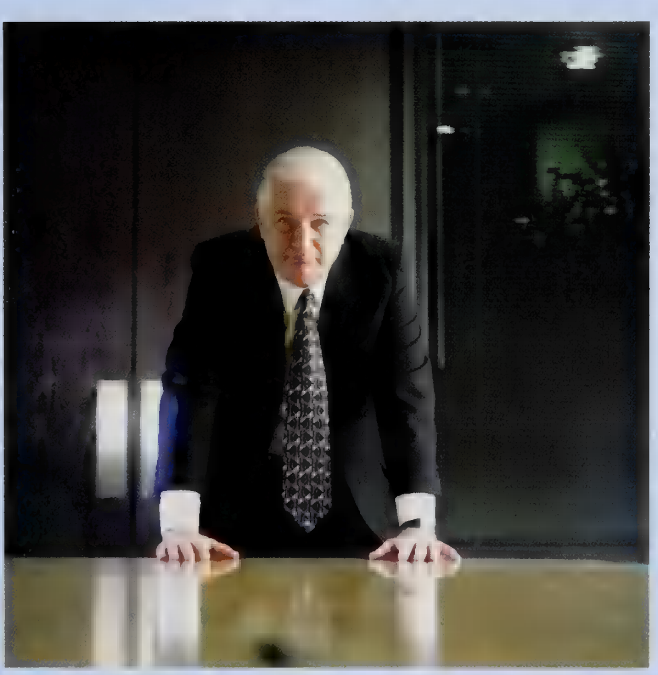

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Product Literature

Air-filtration catalog

Camfil Farr has published a new general-products catalog that provides an overview of the company's air-filter systems, equipment, and capabilities. The catalog covers two primary application areas: comfort air (HVAC filters for protecting people in all types of buildings) and clean processes (air-purification products for even the most demanding classroom environments). 800/479-6801. Camfil Farr, El Segundo, Calif.
CIRCLE 267

Spanish tile CD-ROM

Spanish porcelain tile manufacturer Alcalagres has introduced a new edition of its catalog on CD-ROM. The updated catalog features the complete collection of Alcalagres' five major lines, all of which have recently been expanded. 877/640-0555. Alcalagres America, Miami.
CIRCLE 268

Lighting CD-ROM

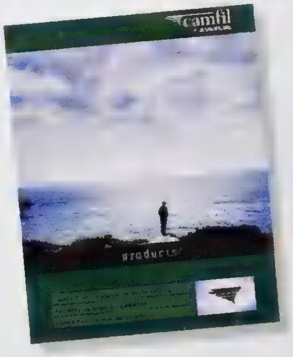
A new CD-ROM from Progress Lighting features all of the products showcased in the *Lighting Solutions* catalog and presents them in a searchable database. Users can select from a wide range of fixtures, organized by category, or search for specific products by SKU, type of fixture, finish, or glass. 864/599-6000. Progress Lighting, Spartanburg, S.C.
CIRCLE 269

Tips for ceiling fans

Regency Ceiling Fans 2001 product catalog presents Regency's full lineup of ceiling fans, light kits, and other accessories, including fan and light controls. Along with product photos and descriptions, the full-color, 88-page catalog also has relevant information, such as instructions for choosing a ceiling fan, home energy cost-saving tips and installation tips, as well as room-size and ceiling-height charts to help pick the right fan and accessories. 800/659-5051. Regency Ceiling Fans, Fenton, Mo.
CIRCLE 270

Decorative details

The Ocar Decor Collection catalog offers a full range of decorative products inspired by popular historical and classical designs. Featured products include cornice moldings, domes, door surrounds, niches, columns, raised panels, and ceiling medallions. 888/OUTWATER. Architectural Products by Outwater L.L.C., Wood Ridge, N.J. **CIRCLE 271**



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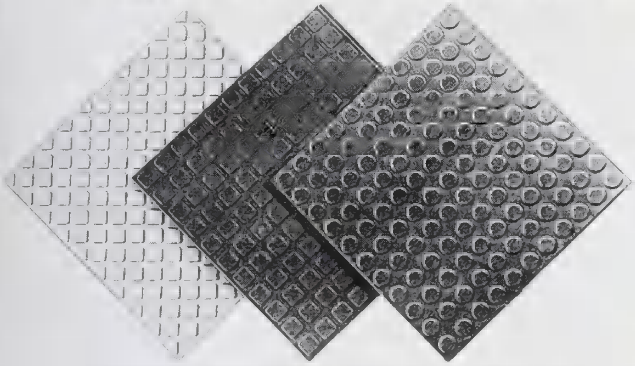

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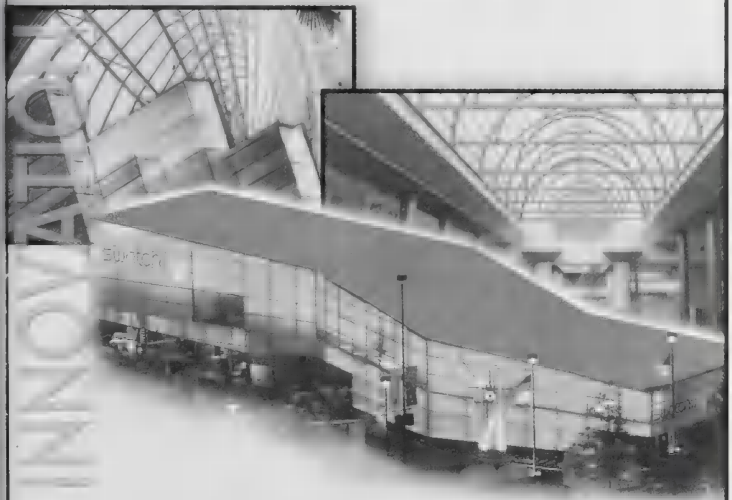

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Dates & Events

New & Upcoming Exhibitions

Light Screens: The Leaded Glass of Frank Lloyd Wright
New York City
May 10–September 2
Exhibits 50 leaded-glass windows of Frank Lloyd Wright. Many of these masterpieces in light and color are drawn from private collections, never before exhibited publicly. At the American Craft Museum. Contact 212/956-3535 or see www.americancraftmuseum.org.

The Architectural Unconscious: James Casebere + Glen Seator
Philadelphia
May 12–July 29
The exhibit brings together the work of two artists who have different but complementary concerns with architecture. Photos and models deal with the uncanny and disjointed elements of architecture and space. At the Institute of Contemporary Art at the University of Pennsylvania. Contact 215/898-5911 or see www.icaphila.org.

John Soane 1753–1837
Montreal
May 16–September 3
Exhibits paintings, drawings, and models of the work of Sir John Soane, never before seen outside his famous British museum. Soane's contribution to modern architecture is explored. At the Canadian Center for Architecture. Contact 514/939-7000 or see www.cca.qc.ca.

The Architecture of Fumihiko Maki: Modernity and the Construction of Scenery
London
May 17–July 22
Exhibits the work of internationally acclaimed Japanese architect Fumihiko Maki. Accompanying lecture to be held on May 15 at the Royal Institute of British Architects. Exhibit at the Victoria and Albert Museum. Contact 20 7942 2558 or s.cole@vam.ac.uk.

Frank Gehry, Architect
New York City
May 18–August 26
Exhibits work from the 40-year career of the architect and of his firm, Frank O. Gehry & Associates. Explores the origins of Gehry's unique vocabulary and his unusual working technique. This major retrospective includes national and international projects. At the Solomon R. Guggenheim Museum. Contact 212/423-3500 or see www.guggenheim.org.

Architectonic Fixations: Photographs from the Collection of Russell Sturgis
St. Louis
May 25–July 31
Exhibits the 19th-century photographic prints from the collection of American architect, historian, and critic Russell Sturgis (1836–1909). At the Olin Library at Washington University. Contact 314/935-5293 or see news-info.wustl.edu.

digital/real—blobmeister, the first built projects
Frankfurt, Germany
May 30–August 5
Features 11 built projects, designed exclusively on the computer, by architects committed to digital design practice. Includes the work of Zaha Hadid, Frank Gehry, Asymptote, Douglas Garofalo, and Greg Lynn. At the Deutsches Architekturmuseum. Contact 49 69 2 12 38471 or see www.rma.de.

The Idea of Louis Sullivan
Chicago
June 9–September 23
Exhibits the photographs of John Szarkowski, former curator of photography at the Museum of Modern Art and publisher of the book *The Idea of Louis Sullivan*. Exhibition marks the occasion of the republishing of the original 1956 book. At the Art Institute of Chicago. Contact 312/443-3600.

Out of the Ordinary: The Architecture and Design of Venturi, Scott Brown and Associates
Philadelphia
June 10–August 5
Exhibits 250 works from one of the most influen-

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CIRCLE 34 ON INQUIRY CARD

tial firms of the last half-century. Presents drawings, models, furniture, and reconstructions of elements of their buildings, many of which are publicly exhibited for the first time. At the Philadelphia Museum of Art. Contact 215/684-7860 or see www.philamuseum.org.

Mies in Berlin
New York City
June 21–September 11
Exhibits work from the early career (1905–1938) of the famous German architect Ludwig Mies van der Rohe. Though Mies is known mostly for his American Modernist glass skyscrapers, this exhibition will focus on early influences. At the Museum of Modern Art. Contact 212/708-9400 or see www.moma.org. Exhibition complements **Mies in America** (see next entry).

Mies in America
New York City
June 21–September 23
Exhibits work from the late career of the German architect Ludwig Mies van der Rohe, after he arrived in America in 1938. The Seagram Building in New York and the Farnsworth House in Illinois are the show highlights. At the Whitney Museum of Art. Contact 212/570-3600 or see www.whitney.org. Exhibition complements **Mies in Berlin** (see preceding entry).

Detonation Deutschland
Vienna
June 28–September 3
A film sequence showing the detonation of German buildings from 1945 to the present, exploring the fate of the act of building. Will be the first exhibition at the Alte Halle, on the occasion of the official opening of the new Vienna Museums Quartier. Contact office@azw.at or see www.azw.at.

Ongoing Exhibitions

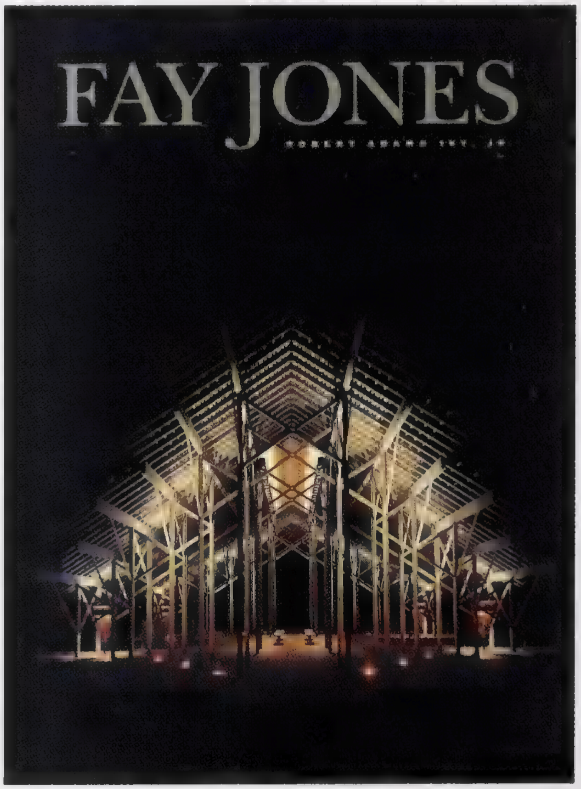
Presences
London
Through May 13
A collaboration between architects 5th Studio and artist Peter Coldwell, investigating familiar domestic objects in an unfamiliar way. Assumptions regarding the everyday are overturned in this unconventional exhibit. Contact 20 7253 3334 or see www.architecturefoundation.org.uk.

Birds Portchmouth Russum Architects
Basel, Switzerland
Through May 27
A major retrospective of the work of the unconventional and exuberant British architects. Photos, models, and artifacts will occupy four floors of the museum. At the Architekturmuseum. Contact 44 20 7729 8434 or see www.birdsportchmouthrussum.com.

Federal Design Now! GSA 2000 Design Awards
Washington, D.C.
Through July 8
Exhibits contemporary architecture and artworks that were commissioned by the U.S. federal government and that won GSA 2000 Design Awards. At the National Building Museum. Contact 202/272-2448 or see www.nbm.org.

Luis Barragán: The Quiet Revolution
London
Through July 8
Exhibits works by the Mexican Modernist, including houses and gardens. At the Design Museum, South Bank by Tower Bridge. See www.designmuseum.org.

On the Job: Design and the American Office
Washington, D.C.
Through August 19



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Architecture and Water
New York City
Through September 28
Focuses on five projects that integrate architecture and landscape to engage today's waterfront. At the Van Alen Institute. Contact 212/924-7000.

Events

Time After, Time Along, The River
New York City
May 5–13
A film by the artist Marie Jose Burki that will transform the Holland Tunnel Ventilation Building into a vast outdoor screen, as it is projected on the building's facade. The film runs twice per evening from 7 to 9 p.m. at Pier 34 on the Hudson River waterfront. Contact 212/431-7165 or see www.minettabrook.org.

27th Annual Wright Plus Housewalk
Chicago
May 19
The Frank Lloyd Wright Preservation Trust is hosting this benefit walk in Oak Park, Ill. Visitors from all over the world will be able to see the interiors of private homes and public landmark buildings by Wright and his contemporaries. Contact 708/848-1976 or see www.wrightplus.org.

Touch-Taste-Look-Feel Italian Design
New York City
May 21
Thirteen leading design stores and showrooms will open their doors to guests, who can meet designers and preview their new Italian products. Accompanying refreshments will include the finest Italian cuisine. In Midtown and Soho from 6 to 9 p.m. For participating stores and restaurants, contact 212/353-1383 or BethD4@aol.com.

AIA/Los Angeles 2001 House Tour Series
Los Angeles
May 20, June 24, July 29
Homes in Malibu, Santa Monica, and Beverly Hills will be open for self-driven tours.The architects will be on hand for discussion. Contact 213/639-0777 x52 or mail@aialosangeles.org.

Conferences & Symposia

Light in Architecture: The Work of Dan Flavin
Marfa, Tex.
May 5–6
Speakers include Roberta Smith of the *New York Times*, Michael Govan of the Dia Center, Kurt Forster of the CCA. At the Chinati Foundation. Contact 915/729-4362.

"The More Things Change"—51st International Design Conference
Aspen, Colo.
June 6–9
Examines the world of design from multiple perspectives. Designers, scientists, cartoonists, business professionals, and environmentalists will attend. Contact 970/925-2257 or info@idca.org.

Ninth Congress for the New Urbanism
New York City
June 7–10
Politics, policy, and design concerns from region to neighborhood will be discussed. Speakers

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include Elizabeth Plater-Zyberk, Andres Duany, Joseph Rose. Contact 800/788-7077 or see www.cnu.org.

A/E/C Systems 2001 Conference
Chicago
June 18–21
More than 15,000 design and construction professionals will participate in conference sessions and attend a large exhibit to find solutions to the most complex challenges. At McCormick Place, Lakeside Center. Contact 800/451-1196 or see www.aecsystems.com.

Making Cities Livable
San Francisco
Deadline: June 30
The conference is issuing a call for papers and an invitation to exhibit for a conference that will be held October 22–26. The broad range of subjects includes sustainability and urban renewal. Contact 831/626-9080 or see www.livablecities.org.

Restoration & Renovation Conference and Exhibit
New Orleans
September 6–8
The theme of the conference is "Neighborhoods and Downtowns: Economic Revitalization through Preservation," with an emphasis on the benefits of preservation for the tourist industry. Sponsored by Restore Media. Contact 978/664-6455 or see www.restorationandrenovation.com.

Conventions

AIA National Convention
Denver
May 17–19
The premier building, design, and construction event, featuring the New Product and Technology Center, Expo 2001 pavilions, and daily presentations. Contact 202/626-7395 or aiaexpo@hhcc.com.

LightFair International 2001
Las Vegas
May 30
Featuring new GE lighting products and services. At the Las Vegas Convention Center. Contact 216/696-0229 x17 or jmorgan@robertfalls.com.

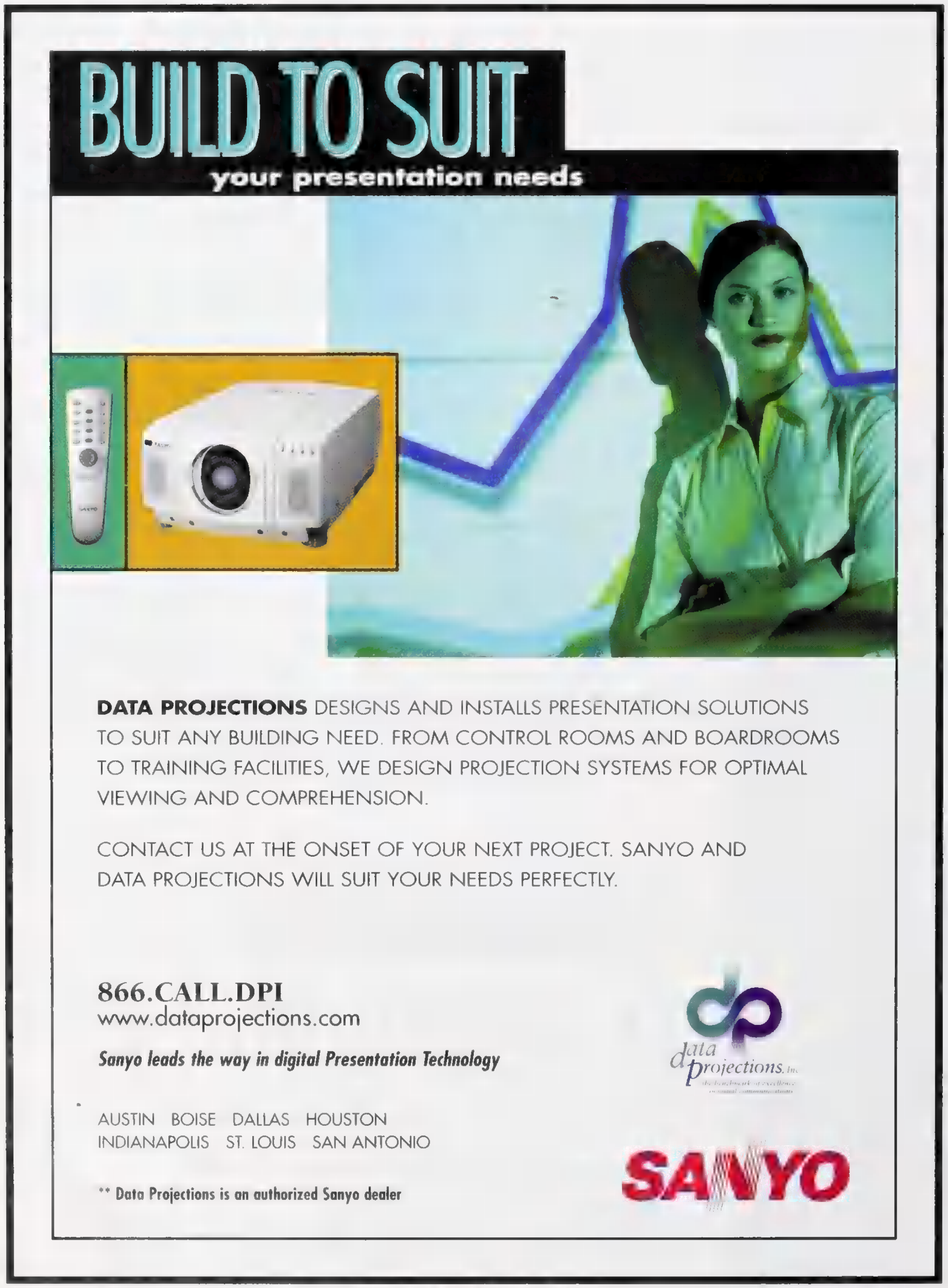
145th Annual CSI Convention and Exhibit
Dallas
June 21–24
Sponsored by the Construction Specifications Institute. At the Dallas Convention Center. Contact 800/689-2900 x4772 or llowe@csinet.org.

Competitions

Getty Grants and Los Angeles County Arts Commission Internships
Deadlines vary
Eligible candidates are college undergraduates seeking paid internships in LA County museums and organizations specializing in performing arts, visual arts, and literary arts. Stipends of $3,000 awarded. See www.getty.edu/grants or www.lacountyarts.org/internops.html.

ARANGO Design Award
June 1
Nominations of emerging talent in architecture and related fields. Cash prize of $1,000 awarded. Contact ArangoFoundation@aol.com or see www.arango-design.com/adf.

AIA Galveston's 15th Annual Sandcastle Competition
June 2
Over 1,600 talented competitors from 70 teams create architecture in an unusual medium: sand. Eligible candidates must be able to tolerate the beach and fun for five hours. On East Beach in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Dates & Events

Galveston, Tex. Contact 713/520-0155.

American Schools & Universities 2001 Architecture Portfolio Competition
Deadline: June 2/entry form & June 30/portfolio
Entries are accepted for public, private, and parochial schools and their associated buildings, completed by January 1999. See www.asumag.com.

Van Alen Institute 2001–2002 Dinkeloo Fellowship Competition
Deadline: June 4
Design and the Ecology of Public Life is the theme for this year's fellowship, which will be awarded to the winning entry in a portfolio and travel-proposal competition. Open to recent or prospective graduates. Award includes a stipend and two-month residency at the American Academy in Rome. Contact 212/924-7000 or see www.vanalen.org.

Architecture+Energy Awards
Deadline: June 4
AIA Portland honors the best in sustainable design. Eligible buildings include any built commercial or multifamily residence in the U.S. or Canada. Contact 503/223-8757 or aeprogram@aiaportland.com.

10th Ermanno Piano Scholarship
Deadline: June 30
Eligible candidates must be a 2000 or 2001 graduate from an architecture program. Winner will be granted $10,000 to work at the office of Renzo Piano Building Workshop in Genoa, Italy. See www.rpwf.org.

Can Struction
Entry Deadline: October 15
Teams led by architects and engineers build giant sculptures made entirely of cans of food. Works are judged at the AIA convention each year. After a week-long exhibition, all cans are donated to soup kitchens, shelters, and the elderly. "Build out" event takes place in over 50 cities in America. Contact 212/79-.4666 or see www.canstruction.org.

E-mail your submissions for Dates and Events to ingrid_whitehead@mcgraw-hill.com two months prior to the event or competition submission deadline.

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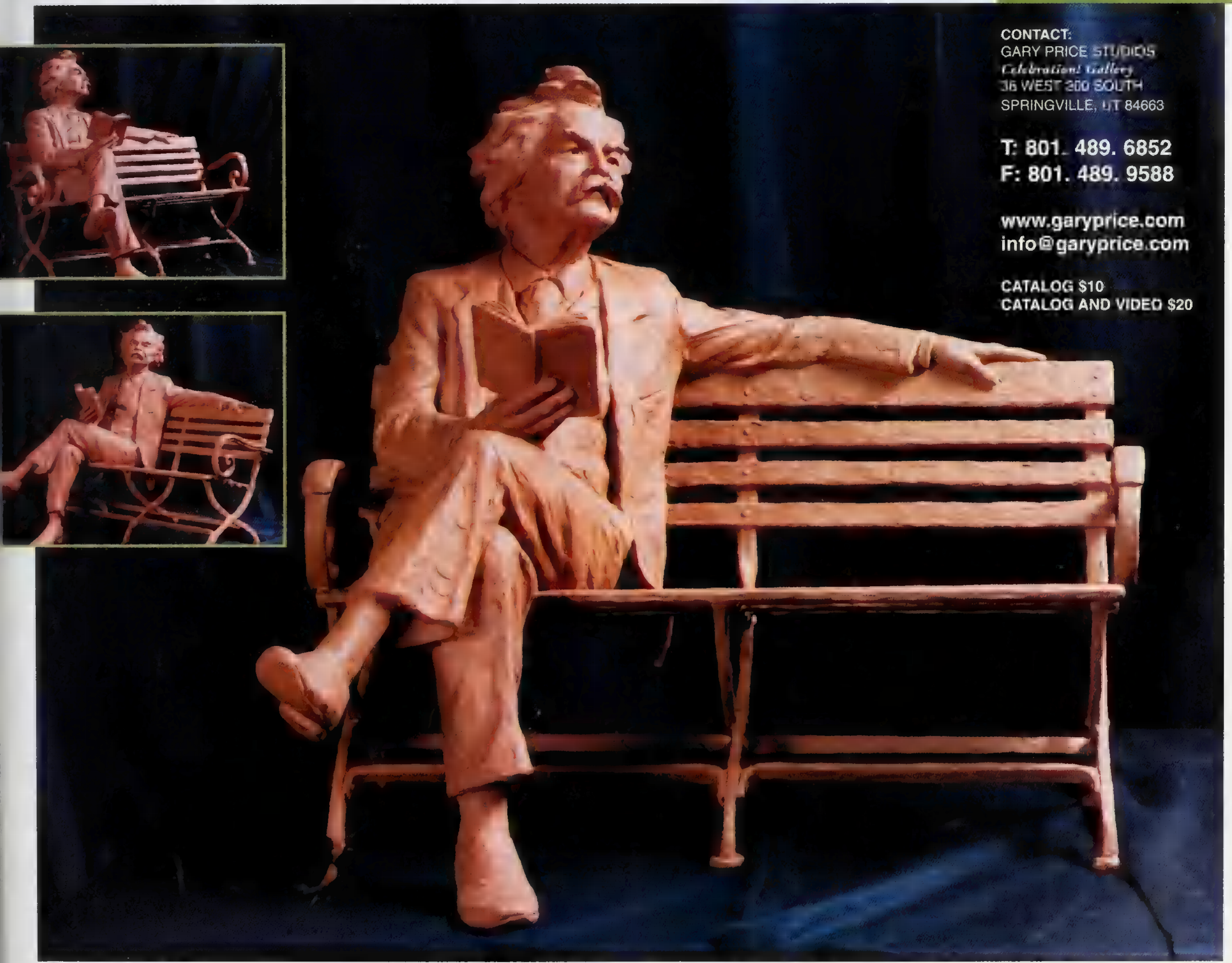

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Throughout the ages there have always been those who have been willing to go beyond the norms and reach for that unknown and distant star. All mankind becomes the beneficiary of those 'leaps of faith' and oft times, we marvel and stand in awe of those 'great ones' and their contributions to humanity. Sir Isaac Newton said that his contributions were great because he was able to stand on the shoulders of his predecessors. I believe we all desire to help make the world a better place and role models help us raise our own sights and set loftier standards.

I hope that as we sit down next to these leaders and get to know them we'll come to appreciate even more their role as contributors and realize that they also were real human beings and yet extraordinary, just as each of us are. Who is to say what contributions we will make!

What lies before us
And what lies behind us
Are tiny matters compared to
What lies within us!

Ralph Waldo Emerson

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CIRCLE 348 ON INQUIRY CARD

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

ANSWERS

Questions appear on page 266. To receive CES credits, fill in the education reporting form below or on our Web site (www.architecturalrecord.com).

1. It is estimated that 85 percent of the dirt entering a building comes in on people's shoes. This dirt includes pesticides, lead, hazardous materials, and animal dander. Therefore, it is best to eliminate the dirt from one's shoes at the entry point in order to keep it from tracking onto floor coverings in the building. Grates or strips of brushes in the entry vestibule can be used to scrape dirt off the bottoms of shoes. These work best when there is a space below the grate to collect the dirt and dispose of it.

2. The easier a bathroom is to clean, the less bacteria will thrive in it. Specifying toilet partitions that are supported from the ceiling makes cleaning the floor around toilets easier and more thorough. Specifying smooth flooring and wall finishes as opposed to small grouted tiles eliminates the grout joints that harbor bacteria. Specifying large easy-to-reach trash cans helps to keep trash contained. Proper venting to draw out smells and humidity needs to be specified. Floor drains, accessible water spigots, and cleaning supply closets should also be available for eliminating bacteria.

3. First, architects can specify materials low in VOCs. Second, they can schedule the installation so that wet finishes are applied and allowed to dry before the absorbent finishes are installed. Third, they can select materials that can be sealed, cleaned, and refinished with solutions that are water-based. Fourth, architects can minimize the different types of materials specified in a room to facilitate the cleaning of these surfaces in the future. Fifth, they can specify the placement of materials according to their cleaning needs, so that the cleaning of one surface does not compromise the integrity of an adjacent surface.

4. The intent of commissioning a building is to organize efforts to integrate the building's design, construction, operation, and maintenance, as well as to provide guidelines for future managers and maintenance personnel. In commissioning, the vision and goals of the design team are communicated to the building's owners and operators, usually through operation manuals. Ideally, a commissioning agent should be involved throughout the design process and continue for a year after the building is opened so that all systems can be tested and the operations and maintenance staff trained for all seasons. Ensuring that a building is operated and maintained in accordance with the way it was designed will keep it a healthier building.

5. Ductwork should be organized so that it is part of the circulation space. When it is laid out to follow the circulation patterns in the space, it is easier to maintain. If it is laid out differently, then cleaning or maintaining the equipment may cause dirt to enter the mechanical system and contaminate the equipment.

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☐ "Here's the Dirt on Green Housekeeping" [page 259]
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Send completed form to University of Oklahoma, Continuing Education, AIA/CES, Room B-4, 1700 Asp Avenue, Norman, OK 73072-6400; fax 405/325-6965. To respond by E-mail, visit www.architecturalrecord.com and click on Continuing Education. For more information, call 800/605-8229.

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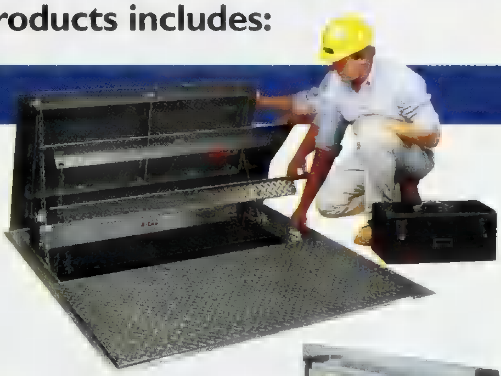

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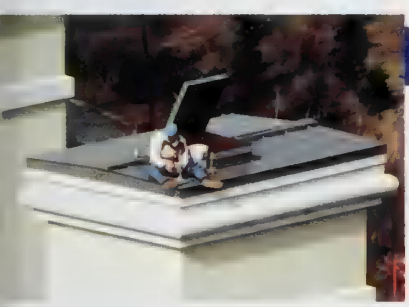
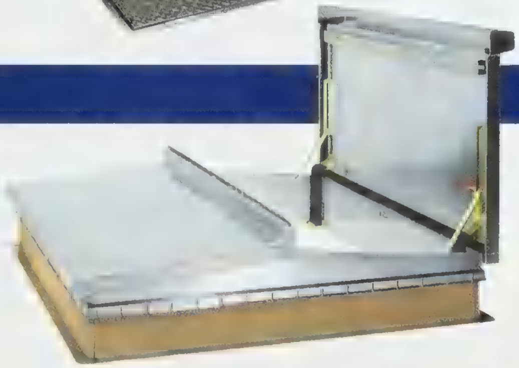


Roof Hatches



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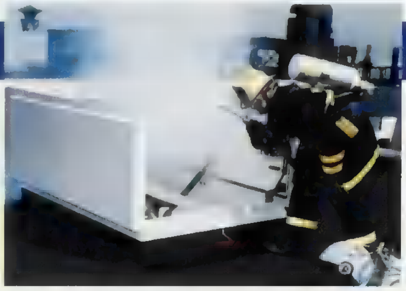

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CIRCLE 350 ON INQUIRY CARD

Marketing today *(continued from page 186)* not projects' is a useful mantra. A key lesson is to make clear what the architectural process looks like from a client's perspective." Brian asks his students to interview firms to learn about their client base, new markets, and strategies to pursue them. Students bring back what they learn from these interviews and report to the rest of the class. Another strategy at UW-Milwaukee involves colleagues and former students who have started their own firms. They report via an e-mail diary about their experiences in attracting new work. The e-mails arrive in installments over the course of the semester. Students critique the architects' decisions about their target markets, their method of making contacts, their marketing materials, and so on. The fact that a young architect, who is not so far removed from the student's own experience, has to hustle and endure disappointments is a very sobering lesson.

While these examples show that the academy itself is finally eschewing the idea that marketing undermines the profession, we suggest much wider use of these kinds of creative approaches.

The more things change . . .

Over the past several months, we have examined the negative associations traditionally attached to marketing and the changes in ethics and rules that have encouraged the profession to begin marketing their services. We have looked at the skill sets required of marketers and the various organizational structures that may be used. We've also seen how the good-old-boy networks of yesterday are being replaced by a new generation of architects who understand that marketing is their firms' lifeblood. And, as Ron Worth, executive vice president of SMPS, says, "Today's relationships are cultivated with cell phones, e-mail, and 'what-have-you-done-for-me-lately?' Globalization is real—relationships evolve over greater distances and in ever decreasing increments of time. People are easily accessible, 24 hours a day, seven days a week, and build their contact databases with ferocity, speed, and concentration."

But how can architects make the most of all the information that can be gathered so efficiently and redistributed almost instantly via the Web? Our conclusion is that improvements need to be made on the most fundamental level, by offering better education for both architects and marketers. Most architects are still insufficiently exposed to marketing concepts and do not develop communication skills in schools. Training architects in the art of marketing drastically increases the likelihood that firms employing them will get repeat work from their clients—the source of most new work. As an aside, it is unfortunate that American universities still do not recognize that the marketing of professional services is different from other kinds of marketing and that it merits its own course work.

The acceleration of communications and information gathering does not change these basic facts: marketing is a complex and necessary part of any practice and should be seen, not as a onetime event, but as an ongoing way of conducting business. It is based on the cultivation of personal relationships, research, and a well-thought-out platform of complementary activities which must be regularly evaluated in terms of the core purpose of the firm. It demands the commitment of firm management or it will fail.

In summary, we like the words of marketing maven Joan Capelin, of Capelin Communications in New York City: "Marketing is one way a firm can consistently think about its future: What you want to do, for whom, where you want to do it, what kind of fee you can command, what standards you want to adhere to. Marketing is far more than an activity; it is an orientation. Architecture. Education. Communication. Business. Service. Marketing. Added together they equal Survival." ■

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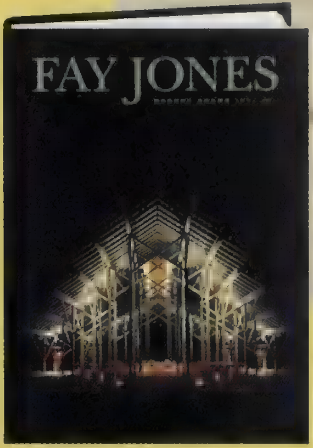

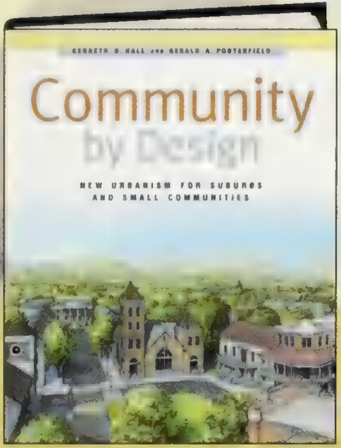

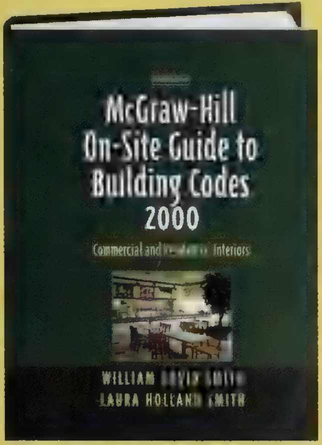

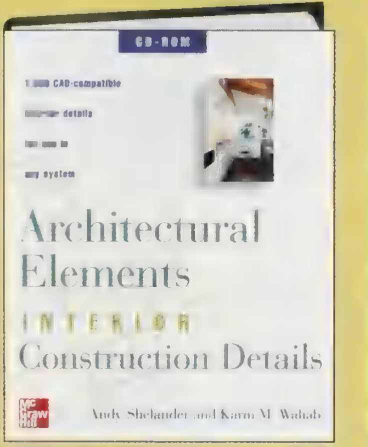

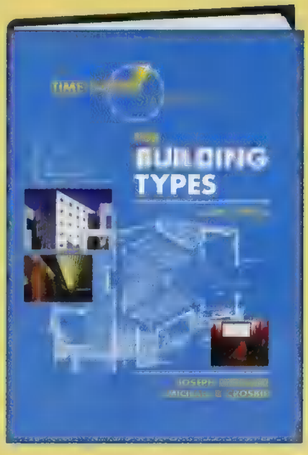

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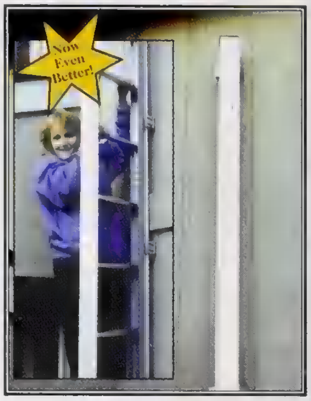

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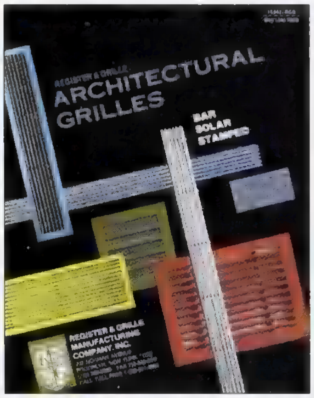

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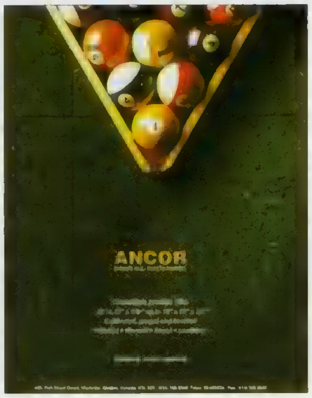

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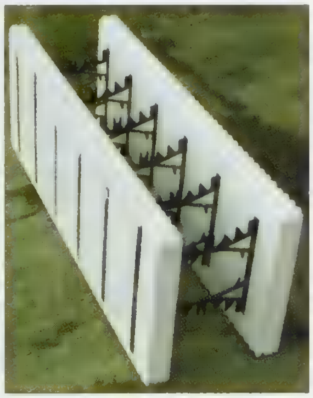
CIRCLE 159 ON INQUIRY CARD

Arxx Building Products Product Announcement



Arxx recently introduced its 10" Cavity Form, providing new capabilities in wall height construction and strength increasing design flexibility in commercial, institutional & industrial construction. Arxx, the world's leading manufacturer of ICFs, continues to expand its products & services, underscoring the theme–Building Trust. The Arxx High Performance Wallsystem is the preferred design solution for all types of buildings, from single family residential to commercial and industrial applications.

Arxx Building Products

CIRCLE 160 ON INQUIRY CARD

NANZ

The No. 2006 is a Bauhaus handle based on a Walter Gropius design. Nanz manufactures this and a wide range of other levers, knobs, locks, hinges and cabinetry hardware. Fax a request for our free Product Selection Guide or our $20 catalogue featuring this and over seventy other handles. phone 212-367-7000, fax 212-367-7375. www.nanz.com

Nanz Custom Hardware Inc.

CIRCLE 161 ON INQUIRY CARD

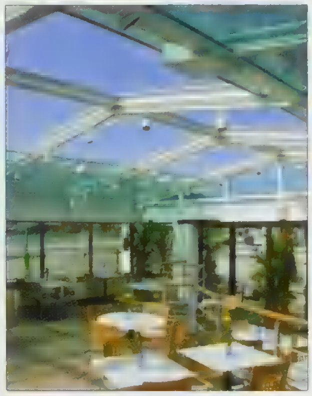
Parallel Design Partnership Limited

"ellen's brackets," an anodized-aluminum shelving system designed by M Ali Tayar, provides an elegant alternative to existing bracket-and-track systems. Cantilevered brackets come in two sizes, for shelves 3/4 or 3/8-in. thick and 10-in. deep. Wall-mounted tracks permit 1 1/2-in. adjustment of wood, glass or plexiglass shelves. For more info phone Parallel Design Tel: 212-989-4959 Fax: 212-989-4977.

Parallel Design

CIRCLE 162 ON INQUIRY CARD

Retractable Roof Enclosures & Skylights



Custom designed retractable roof panels and operable skylights create year-round settings. At the touch of a button, motorized panels retract to open 50% of the roof area, letting in sunshine and fresh air. Maintenance-free thermally broken aluminum framing. Enclosures ideal for restaurants, patios, pools and atriums. For more information, call 800-267-4877, Email: openaire@openaire.com or visit www.openaire.com

OpenAire Inc.

CIRCLE 163 ON INQUIRY CARD

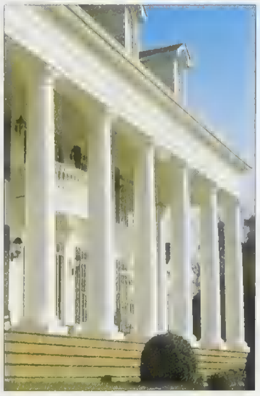
Ornamental Picket Fence with a Purpose

Monumental Iron Works™ is a modular system with the solid look & feel of authentic wrought iron. When assembled, it creates one of the strongest ornamental fence systems on the market. Welding processes are eliminated to avoid red rust problems. MIW utilizes a duplex coating of polyester resin over hot-dip galvanized steel for corrosion protection. Master-Halco, Baltimore, Maryland 21040. 410.676.2744 Email: spec@fenceonline.com Web site: www.fenceonline.com

Monumental Iron Works™

CIRCLE 164 ON INQUIRY CARD

Melton Classics: Columns, Balustrades, and Mouldings



Melton Classics architecturally correct columns, balustrades, and architectural details, are the industry standard for quality and design. Columns are available in fiberglass, resin composite, GFRC, GRG and wood. MarbleTex™ Balustrades and columns are integrally colored and require no painting. Ask us about our complete line of architectural ornamentation in Melton Stone™ cast stone. Call toll free 800-963-3060 or visit www.meltonclassics.com

Melton Classics

CIRCLE 165 ON INQUIRY CARD

Ventilate All Baths with One Quiet Fan

ALDES ventilation specialists offer multiple solutions to noisy and ineffective bathroom fans. Quality remote mounted fans provide both quiet and effective exhaust. Systems available for 1 to 6 baths. Simple to install. Energy efficient. Cost Effective. Super quiet. ALDES the art of ventilating. American ALDES Ventilation Corp. 4537 Northgate Court, Sarasota, FL 34234-2124 Phone: 800-255-7749 www.americanaldes.com info@aldes-us.com

American ALDES

CIRCLE 166 ON INQUIRY CARD

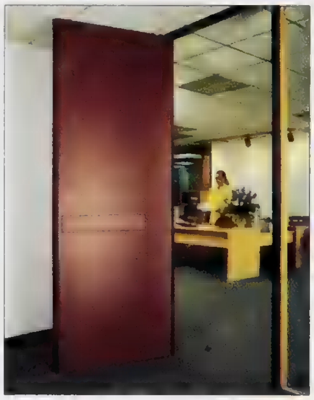
Ambassador Shake™

Utilizing patented tri-laminate technology, CertainTeed's Celotex Ambassador Shake™ is a super-heavyweight shingle (390 lbs/square) with a stunning three-dimensional appearance that rivals the look of classic wood shakes. Ambassador Shake™ is algae-resistant, carries a UL Class A fire rating, is UL certified to meet stringent ASTM D3462 performance standards and features a lifetime, limited warranty.

CertainTeed

CIRCLE 167 ON INQUIRY CARD

Applications

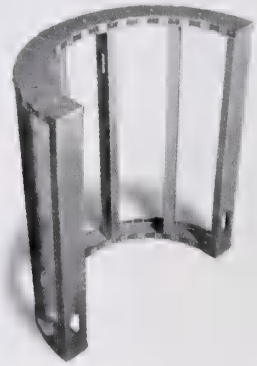


The new flush exit device is designed for use on TOTAL DOORS in single, pairs and double egress pairs. Ideal for corridor & elevator lobby applications in all commercial facilities. The exit device allows continuous, uninterrupted sightlines in corridors when doors are pocketed in the open position. Its quiet operation is ideal anywhere noisy hardware is a problem. TOTAL DOORS can be retrofitted into existing door frames, saving time & expense.

Openings

CIRCLE 168 ON INQUIRY CARD

Beautiful Curves Just Around the Bend

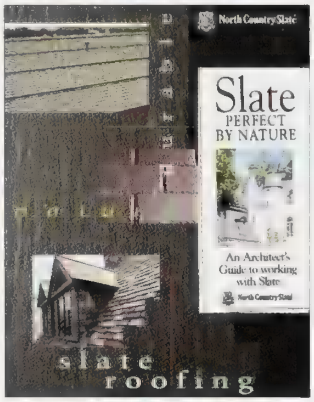


Flex-Ability Concepts' new Flex-C Trac® system lets you flex your creative muscles. Made of sturdy, galvanized sheet metal, Flex-C Trac® solves the problem of curves through the use of pivotal sections that can be easily shaped by hand and secured with self-tapping screws. No more uneven, flimsy curves with flat spots.

Flex-Ability Concepts

CIRCLE 169 ON INQUIRY CARD

Slate Roofing

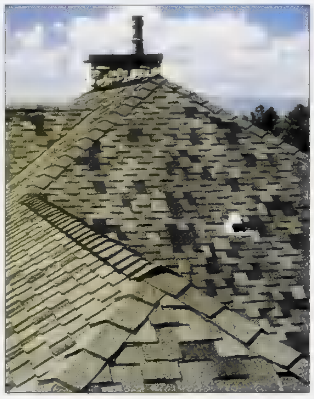


Natural North Country Slate® For enduring character, nothing else compares. No wonder—it's perfected by nature! Free product brochure showcases the wide variety of sizes and colors, and comes with our Architect's Guide to working with this remarkable roofing material.

North Country Slate®

CIRCLE 170 ON INQUIRY CARD

Presidential™ TL



With its patented tri-laminate technology and rugged sculptured tab design, CertainTeed's Celotex Presidential™ TL is a super-heavyweight shingle (450 lbs/square) designed to give the rich look and depth of wood shakes. Presidential TL is algae-resistant, carries a UL Class A fire rating, is UL certified to meet stringent ASTM D3462 performance standards and features a lifetime, limited warranty.

CertainTeed

CIRCLE 171 ON INQUIRY CARD

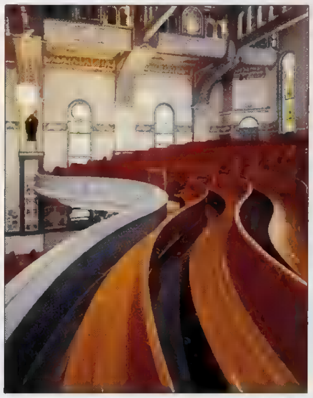
Keep It "All" Beautiful

Grasspave2, from Invisible Structures, Inc., is the industry leader in porous paving. A beautiful way to reinforce turf for parking lots, driveways, access roads, and firelanes. Grasspave2 is made from 100% recycled plastic and provides a natural filtration system for automobile and parking-lot runoff. Call 1-800-233-1510 or visit www.invisiblestructures.com.

Invisible Structures, Inc.

CIRCLE 172 ON INQUIRY CARD

The Radius Curved Church Pew



Since 1919, New Holland Church Furniture has supplied churches nationwide with both custom & standard church furniture. Today, New Holland is the only manufacturer of "Radius Curved Pews" in the USA. As a certified member of the Architectural Woodwork Institute (AWI), you can be assured of our consistent high quality. New Holland has just developed all new product catalogs for our Pews & Solid Wood Chairs. New Holland Church Furniture, 313 Prospect St, New Holland, PA 800-220-1465

New Holland

CIRCLE 173 ON INQUIRY CARD

Swing Gate Operators from FAAC

FAAC is the world's largest specialized manufacturer of hydraulic operators for swing, slide and barrier gate systems. The Model 400 heavy-duty hydraulic swing gate operator is UL 325 compliant and designed for applications needing maximum versatility such as subdivisions and apartments. Its power and reliability also make it ideal for large, ornate gates. Call 1-800-221-8278 for a brochure or visit www.faacusa.com

FAAC International, Inc.

CIRCLE 174 ON INQUIRY CARD

Architectural Concrete Flooring & Paving

Patène Artectura® by Bomanite Corporation is a revolutionary new systems approach to concrete flooring and pavements. Four-page color brochure illustrates the system's creative techniques in coloring, patterning, texturing and finishing methods. Appropriate for interior and exterior applications, new or existing concrete. Call 559-673-2411 for a Bomanite contractor near you or www.bomanite.com.

Bomanite Corporation

CIRCLE 175 ON INQUIRY CARD

Acoustic Door Systems

IAC manufactures acoustic door systems with the industry's highest STC ratings. Noise-Lock® doors are fire-rated & available in many finishes. As fully assembled systems, IAC's Noise-Lock® doors are factory guaranteed for the specified acoustic performance. Door systems are available as bi- and tri-fold, and with vision glass. Applications: offices, recording studios, control rooms, conference halls, computer rooms, & auditoria. 718-931-8000 / email info@industrialacoustics.com

Industrial Acoustics Co.

CIRCLE 176 ON INQUIRY CARD

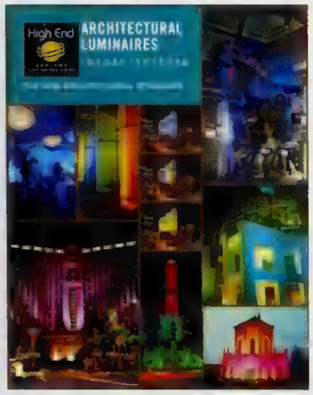
Site Furniture of Distinction

Keystone Ridge Designs, Inc. is the architect's choice for premier site amenities. Offering a full line of steel furnishings, we pride ourselves on exclusive designs and our patented powder coat finish, KEYSHIELD,™ that is unparalleled in the industry. Quality, craftsmanship, and dedication to your creative vision are the hallmarks of Keystone Ridge Designs. For more information please call 800-284-8208 or e-mail: KeystonRdg@aol.com. www.keystoneridgedesigns.com

Keystone Ridge Designs

CIRCLE 177 ON INQUIRY CARD

Modern Architectural Lighting for a New Millenium

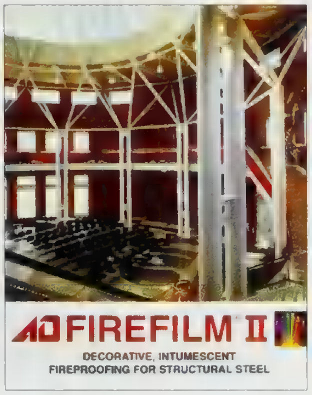


High End Systems' range of architectural luminaires can help you bring buildings to life. Indoors, the Color Pro® Series provides seamless color mixing, and hard-edge and soft wash effects in a flexible, high-powered design. The weather-resistant EC-1™ and ES-1™ Architectural Luminaires can be mounted in any orientation allowing you to paint with color and patterns across virtually any outdoor space.

High End Systems

CIRCLE 193 ON INQUIRY CARD

Decorative, Thin-Film Intumescent Fireproofing



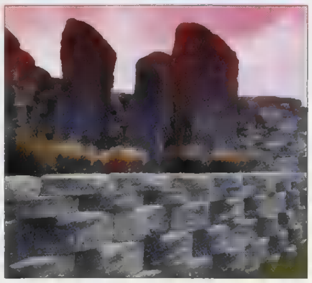
Improved spray characteristics & ratings up to 3 hours! A/D FIREFILM®II permits designers to use the appearance of exposed steel with the steel protected from fire. The product is applied as a thin-film coating 0.4 to 3.3 mm (16 to 130 mils) thick. When exposed to fire it expands to form a meringue-like insulating layer up to 4 in. thick. A/D COLORCOAT topcoat is available in a wide range of colours. Call 800-263-4087 or 416-263-4087. Internet: www.adfire.com See us in Sweets.

A/D Fire Protection

CIRCLE 179 ON INQUIRY CARD

Keystone Retaining Wall Systems

KEYSTONE
RETAINING WALL SYSTEMS
A CONTECH COMPANY

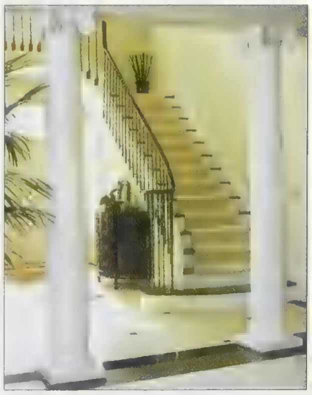


Keystone Retaining Wall systems offers irresistible beauty that lasts. The system was developed with simplicity of construction in mind. 6 simple steps are all it takes for start-to-finish efficiency. Because Keystone offers great looks, easy installation, low maintenance, & durability, it delivers a superior return on investment. As the original & proven market leader, it's no wonder the Keystone retaining Wall System is the preferred choice across the US & around the world for commercial, public & residential properties. Web: www.keystonewalls.com

Keystone Retaining Wall

CIRCLE 180 ON INQUIRY CARD

Chadsworth's 1.800.Columns® www.columns.com



American Building Products Award Winner 2001. Columns, pillars, pilasters & posts available in wood, PolyStone™ & fiberglass. Interior, exterior. Variety of sizes & styles. Competitive prices. Jobsite delivery. Worldwide shipping. Our 2nd Edition 2000-2001 Idea Book features an exciting collection of column projects. Includes columns Product Portfolio, $20 soft cover. Columns Product Portfolio $5 (credited to first order). Free flier. 1.800.486.2118 Fax 910.763.3191

Chadsworth's 1.800.Columns®

CIRCLE 181 ON INQUIRY CARD

T: (800) 484-4042 ext 3042 / F: (770) 889-9152
E-mail: Ally_Wingate@McGraw-Hill.com

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Unique Early Childhood Furniture

GRESSCO, Ltd introduces HABA® a new line of children's modular Loft furniture, shelving, platforms and room partitions in addition to our existing array of Kinder-System™ reading furniture. Now you can create a truly unique children's area in your hospital waiting room, daycare center, church or library. Call GRESSCO today for a FREE catalog at 800-345-3480, www.gresscoltd.com

GRESSCO Ltd.

CIRCLE 182 ON INQUIRY CARD

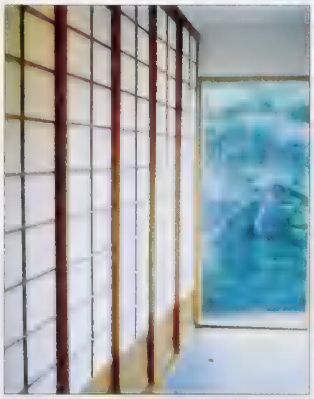
Architectural Bird Control

Effective, inconspicuous and humane Nixalite stainless steel bird barriers are now available with blunt or sharp points. Nixalite can be installed almost anywhere a bird can land to prevent bird damage. EnduraNet bird netting is a discrete knottless net that simply prevents birds from accessing protected areas. With over 51 years of bird control experience, Nixalite will assist you with any bird control problems. Free samples & catalogs are available. 800-624-1189 or visit www.nixalite.com

Nixalite® of America Inc.

CIRCLE 183 ON INQUIRY CARD

Shoji - Custom Dividers, Pocket and Passage Doors



Shoji maker of choice among trade. Custom made in the USA, using solid American hardwoods, durable facings and exceptional craftsmanship. Perfect for pocket doors, window coverings and room dividers. Custom passage doors available. Commercial, Hospitality and Residential projects. Call for 28-page shoji catalog featuring the latest in Shoji Design ideas. 800-634-3268 or www.cherrytreedesign.com

Cherry Tree Design

CIRCLE 184 ON INQUIRY CARD

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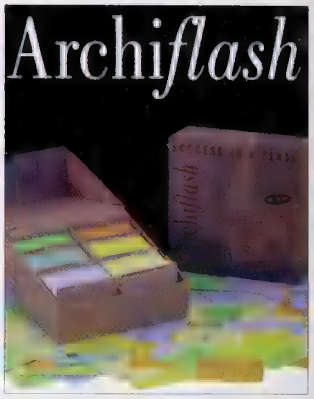

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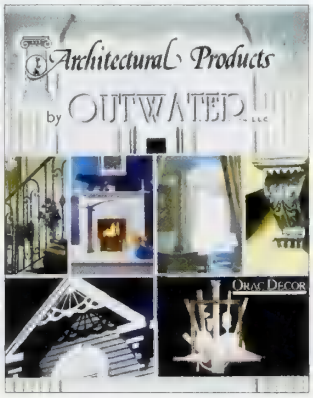
Nalsa, Inc.

CIRCLE 185 ON INQUIRY CARD

Architectural Products by Outwater

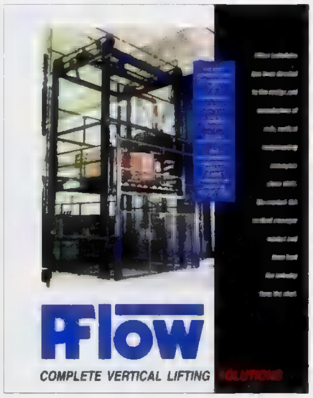


Architectural Products by Outwater's Free 950+ Page Master Catalog for 2001 features 35,000 newly introduced and regularly stocked standard and innovative component product essentials which include Interior/ Exterior Millwork, Columns, Brass Hardware, Wrought Iron Components, Lighting, Furniture & Cabinet Components, Knobs & Pulls and more. Call 1-800-835- 4400; Web: www.outwater.com

Outwater

CIRCLE 186 ON INQUIRY CARD

Pflow Lifts Safely Move Materials Between Levels



Pflow Vertical Lifts transport materials between two or more levels. Designed for mezzanines, through floor, interior & exterior applications. Capacities from 10 lbs. to 100,000 lbs., vertical heights to over 200', carriage sizes to 30' x 30'. Mechanical, hydraulic and fully automated systems. Guaranteed code approval. Visit Pflow website for complete product information and CSI specs. Call 414-462-8810 Fax: 414-462-2673 www.pflow.com

Pflow Industries, Inc.

CIRCLE 187 ON INQUIRY CARD

Dodge-Regupol Launches ECOsurfaces™

Dodge-Regupol (DRI), the world's largest converter of post-consumer tire rubber, launches Ecosurfaces™, xtreme recycled rubber™ flooring for both indoor & outdoor commercial applications. Not only environmentally sound, but also available in 38 vibrant colors, Ecosurfaces in rolls & tiles responds directly to designers' needs & their budget concerns. For a fresh new colorful way to create attractive environments, call Gerbert Ltd. at 877-Ecosurfaces (877-326-7873).

Gerbert Ltd.

CIRCLE 188 ON INQUIRY CARD

Radiant Barrier Low E Coating

LO/MIT-I Radiant Barrier coating is a silver colored, non-thickness dependent, low cost spray applied replacement for foil type barriers. It conforms to ASTM C 1321-98 specification for "Interior Radiation Control Coatings", & is an EPA Energy Star Ally product. Shipped premixed, it is easily applied with standard spray equipment. Solar Energy Corp., 129 Walters Ave., Ewing, NJ 08638-1829. Ph: 609-883-7700, Fx: 609-497-0182, www.solec.org, Email: 71263.413@compuserve.com

Solar Energy Corporation

CIRCLE 189 ON INQUIRY CARD

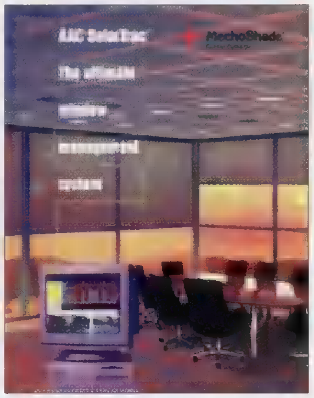
The A-Frame

Solid wood drawers with 1/4" hardboard bottoms run smoothly on wood runners with nylon glides; durable laminate finish on 3/4" 45-lb. particle board core – resists stains and scratches; stackable; radius edges & hoop oak handles; optional base and custom files available; 46 3/8" x 33 1/2" x 15 3/4" ; www.flatfiles.com; quantity discounts; satisfaction guaranteed since 1992. 1-888-576-9696

The A-Frame

CIRCLE 190 ON INQUIRY CARD

AAC SolarTrac™ Window Management System

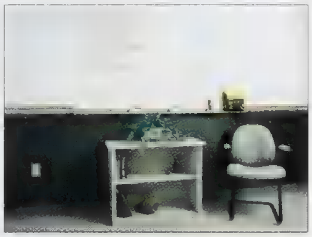


The AAC SolarTrac™ Window Management System tracks the sun to incrementally adjust ElectroShades® automatically and building wide, to optimize the shadecloth's solar protection and energy efficiency characteristics. AAC SolarTrac™, using a PC-based program, factors in the sun's angle of incidence, solar heat-gain, allowable solar penetration, brightness and glare control based on the building's specific location. 718-729-2020 or www.mechoshade.com

MechoShade Systems, Inc.

CIRCLE 191 ON INQUIRY CARD

Koroseal Products Offer Commercial Design Solutions



The new Traffic Patterns™, Rigid Wallcovering by Korogard, line of decorative wallcoverings bring together the durability of interior wall protection with the aesthetic appeal of wallcovering. Traffic Patterns are available in any 21 oz. fabric-backed Koroseal®, Vicrtex®, or Koroseal Studios® patterns. Korogard® offers a complete and effective system of wall, door, and door frame protection. For more information please call (800) 628-0449 or visit www.korogard.com

Koroseal Products

CIRCLE 192 ON INQUIRY CARD

The Gage 700 Series

The new standard for perforated metal ceilings. Gage introduces its new 700 series of perforated metal ceilings manufactured from 50% recycled aluminum. Standard designs include five distinctive finishes and 14 different perforation patterns. Selective and custom designs are also available. Contact the Gage factory for literature and samples. 800.786.4243, 803 South Black River St., Sparta, WI 54656 USA, 608.269.7447, Fx: 608-269.7622 www.gageceilings.com

Gage Corporation

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Woodfold - Instant Walls & Doors When Needed

You've got enough to worry about. Our rapid production cycle assures on time completion of your important projects. Since 1957 Woodfold has provided custom made folding & roll-up doors to the American construction industry. Accordion door models are available for sight, security, & acoustic installations. Our solid hardwood roll-up doors coil conveniently over head. Woodfold doors are available through an extensive network of building product & specialty distributors.

Woodfold-Marco Mfg. Inc.

CIRCLE 194 ON INQUIRY CARD

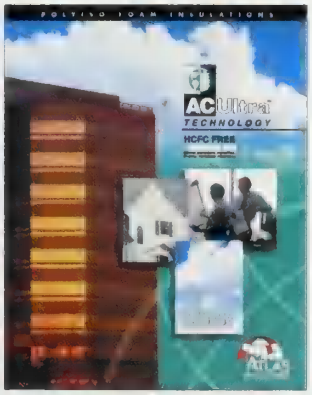
Metal Building Product Systems from Centria Int'l

Centria Int'l is one of the world's leading suppliers of metal building product systems for architectural, commercial & industrial buildings applications. Our wall, floor & roof capitalize on the design freedom, durability & economy of metal structures while our team of engineers provide customized service at any project phase. No matter where in the world your next project may be located, rely on a century of experience from Centria Int'l. Visit www.centriaintl.com or call 800-759-7474.

CENTRIA International

CIRCLE 195 ON INQUIRY CARD

ACUltra™ Technology

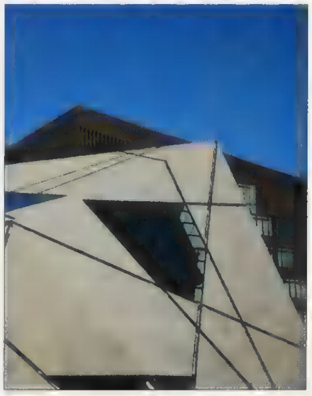


Atlas® Roofing Corp. is the first company to research, develop & introduce a new generation of environmentally-friendly HCFC free polyiso insulation roofing products, known as ACUltra™ technology. Recognized as the leader in roofing products for nearly 2 decades, Atlas® Roofing Corp. continues to set new industry standards by introducing HCFC free polyiso products for a better workplace & a safer environment. Call 770-933-4479, or www.atlasroofing.com

Atlas Roofing Corporation

CIRCLE 196 ON INQUIRY CARD

The Geode



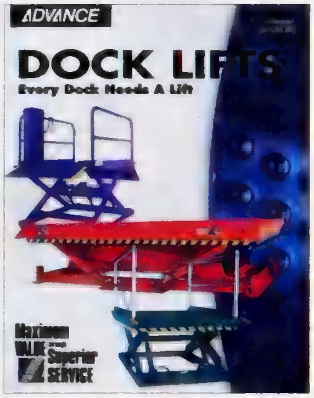
"The Geode," properly known as McNamara Alumni Center at the University of Minnesota Gateway, presented some unusual challenges. Granicor was able to produce the geometric analysis required in order to fabricate the Acajou Red granite required by Antoine Predock's design – Do You Have A Challenge For Us? Since 1922, Granicor has been furnishing granite for projects of note. To inquire about their large selection of granite please call 418-878-3530 or US Sales 352-326-8139.

Granicor

CIRCLE 197 ON INQUIRY CARD

ADVERTISEMENT

Advance Lifts

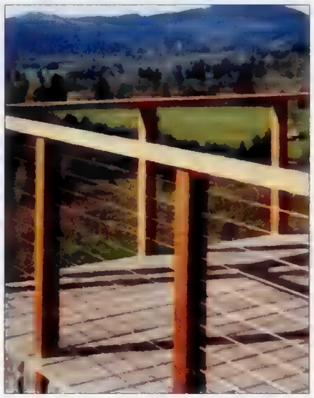


Advance dock lifts offer architects the means to make every building's shipping and receiving dock 100% accessible. If there is no loading dock, the dock lift is the loading dock. If the dock is too low or too high, the dock lift adjusts to any vehicle.

Advance Lifts

CIRCLE 198 ON INQUIRY CARD

CableRail™: Railing In-Fill That Won't Block Your View!

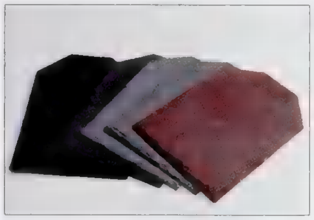


CableRail™ prefabricated, stainless steel, cable assemblies open the field of vision on railings, fences and trellises by replacing standard wood or metal pickets. Plus special concealed end fittings make installation fast, easy & attractive. Perfect for interior, exterior, residential or commercial settings on new or existing wood or steel frames. Call for free brochure: 800/888-2418. Feeney Wire 2603 Union St., Oakland, CA 94607 Fax: 510/893-9484 E-mail: sales@feeneywire.com

Feeney

CIRCLE 199 ON INQUIRY CARD

Celestial Slate Tile



EcoStar, a leading manufacturer of premium steep slope roofing products, is proud to introduce their newest fire retardant roofing product, Celestial Slate Tile. Celestial Slate offers the beautiful look of slate yet is lightweight and ½ the cost of a traditional slate roof. Celestial Slate provides a 50-year product warranty, Class 4 Hail Resistance, 100 mph wind warranty and a UL Class A Fire Rating. Celestial Slate is made of 80% post-industrial materials. 800-211-7170.

EcoStar

CIRCLE 302 ON INQUIRY CARD

High-Performance Roofing and Flooring Systems

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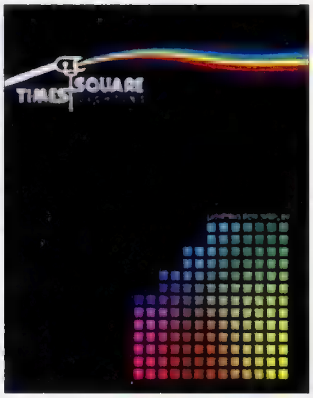

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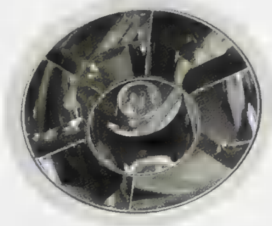

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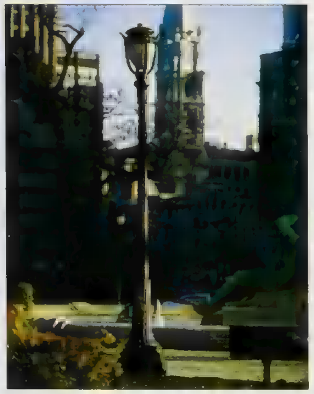

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Hong Kong invites you to help design its new integrated arts, cultural and entertainment district

Entries are invited for the Concept Plan Competition for the development of a prominent waterfront area of 40 hectares into an Integrated Arts, Cultural and Entertainment District at the West Kowloon Reclamation in Hong Kong. This Competition is organized by the Planning and Lands Bureau of the Government of the Hong Kong Special Administrative Region. The objective is, through the development, to enhance Hong Kong's position as Asia's premiere centre of arts, culture and entertainment and help create a new look for Victoria Harbour.

The competition is open to all qualified planners and architects.

Awards for the winners of the Competition are :

First prize:	HK$ 3.0 million
Second prize:	HK$ 1.5 million
Honourable mentions (3):	HK$ 0.8 million each
Registration begins:	7 April 2001
Registration deadline:	8 June 2001 (5:00 pm Hong Kong Time)
Submission deadline:	29 September 2001 (12:00 noon Hong Kong Time)

For further information :

Address: Coordinator for the West Kowloon Reclamation
Concept Plan Competition
Room 723, 7/F., North Point Government Offices
333 Java Road, North Point, Hong Kong
Fax: (852) 2117 0772
E-mail: wkrcpc@pland.gov.hk
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Request for Proposal

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To receive a copy of the Request for Qualifications package, contact:

OFFICE OF THE SUPERINTENDANT
GRAND TETON NATIONAL PARK
P.O. BOX 170
MOOSE, WYOMING 83012
ATTN: VISITOR CENTER DESIGN
THAYNA O'BRIEN
307.739.3410

Requests for packages must be received by June 4, 2001.
Final submittals are due by June 25, 2001

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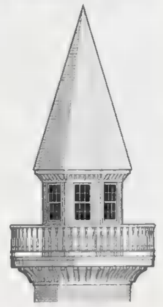

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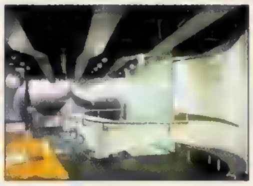
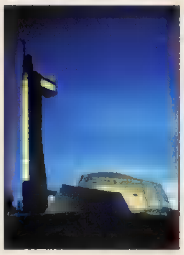

Photos, drawings and commentary are featured on *Architecturalrecord.com* for the web-only projects as well as projects from the magazine. Links to key products and people involved in each project, are also included.

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Profile

Ann Mullins and Mark Johnson: Landscape pioneers with a cause

Interviewed by Ingrid Whitehead

A shared love of fast cars (old Porsches) and motorcycles brought Ann Mullins and Mark Johnson together. But it was their shared desire to shape the landscape and change the nature of landscape architecture that led them to Denver, Colo., where they created their firm, Civitas. Famous for their tendency to unflinchingly (and successfully) fight their way through political logjams, Ann and Mark have created trails, parks, plazas, and rooftops, restored wetlands and prairies, and, lately, worked to reconnect Denver with its river. The couple recently parked their Harleys, hung up their gloves, and talked with RECORD *from their Denver office.*

Q: *You have quite a reputation for being "fighting landscape architects"—you don't seem to be put off by politicians and political red tape. Why bother?*

Mark Johnson: It's one of the things that distinguishes us—Civitas is not a tool, or a neutral thing. We don't waste our time arguing with bureaucrats. I hate "facilitating." We will only meet with the real decision makers, the mayors, or the people who really have the power to make changes. Then we try to harness that access and tie the deepest forces together. Politicians are the glue, and reactive, but they can end up with synthetic thought.

As landscape architects, what do you see as your role? What do you hope to accomplish?

Ann Mullins: Our work should be used and should last a long time. That's why we're dedicated to changing the conditions of landscape design.

MJ: Design has to be authentic to the place. It's not about "us," it's about the people who will be using it. As far as working with architects, there's a tendency for landscape architects to feel like they're providing a service. It's foolish, but common. I refuse to accept that. As landscape architects we aren't providing a service to complement a building, we are framing the conditions for design, we're setting up the entire redevelopment of the site. Of course, we work with architects constantly, and we love working with architects. I would never be arrogant enough to think that we, as landscape architects, could do it all ourselves. But I think there are two types of architects: the kind who don't want to upset their clients and the kind who will push good design at the risk of challenging their clients. The second type, those are the architects we collaborate with. We do our best work when we're in that kind of relationship.

The two of you have lived and worked all over the country, Ann in Massachusetts with Sasaki, Mark in Seattle with Jones & Jones—what finally made you decide to settle in Denver?

AM: We love the Western landscape, and we were determined to keep to urban work. And luckily, the last two mayors [Federico Peña and current mayor Wellington Webb] really have pushed redevelopment in Denver.

Do you ever give up?

MJ and AM: Absolutely!

MJ: We run from bad clients like from a fire. Part of realizing what kind of projects are worth fighting for is realizing what kinds aren't. ■

Photograph by Paul Abdoo/Abdoo Studios. To learn more about Mark and Ann, go to www.civitasinc.com.

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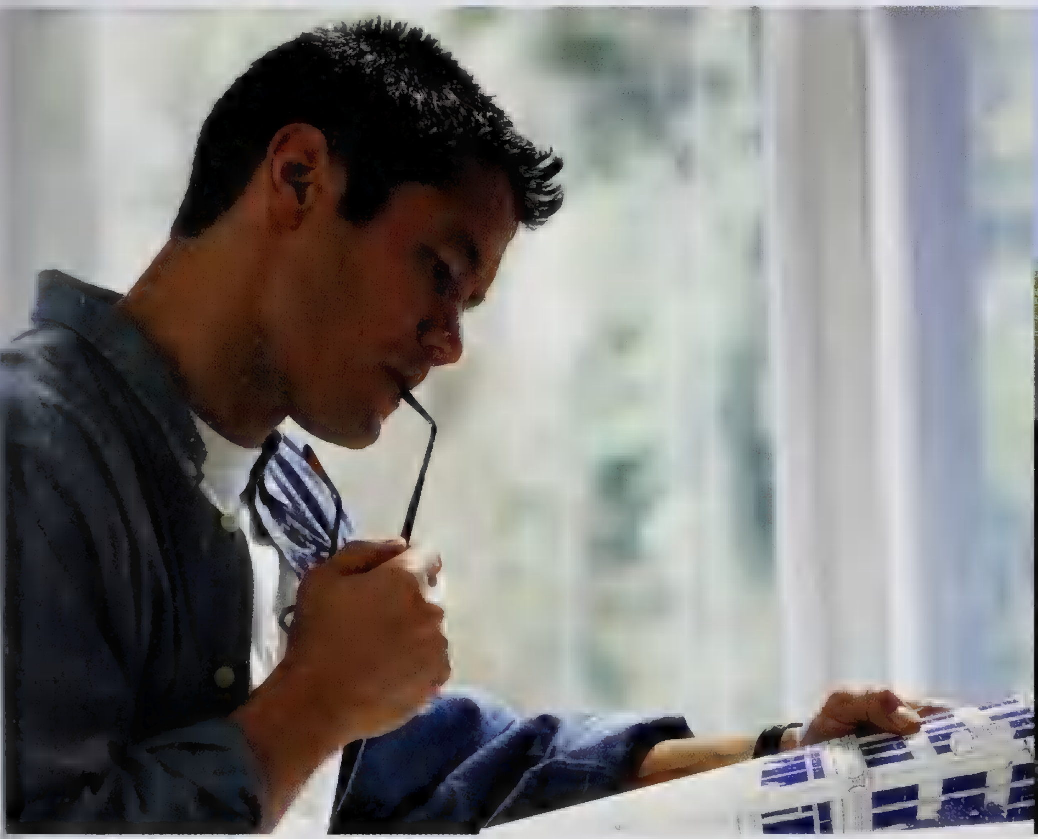

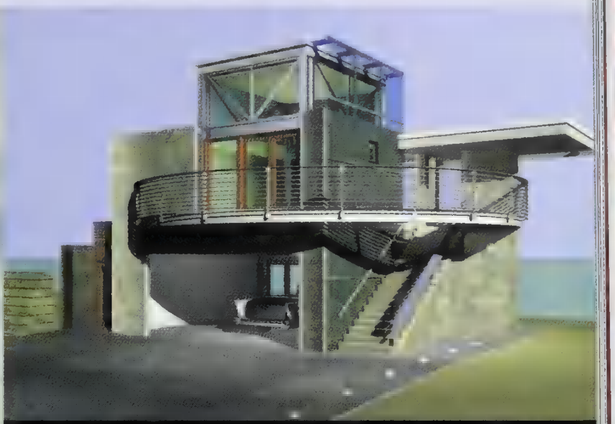

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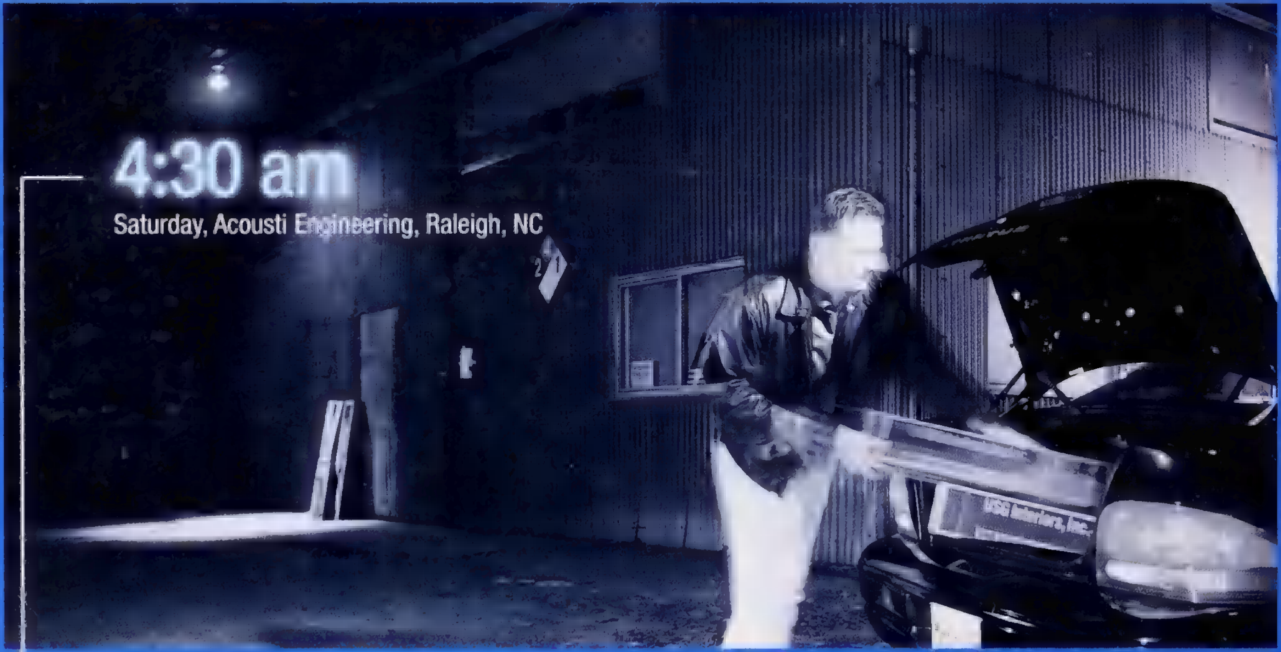
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Saturday, Acousti Engineering, Raleigh, NC

At 5:30 Friday night, Monday's grand opening of the North Carolina Aquarium looked anything but grand for the contractor. Short three boxes of Centricitee™ two and four-foot tees, he made several calls but was unable to locate the cross tees he needed. At 6:30, he called USG Sales Rep Pat Lawson. Pat's live voice on the phone this late on a Friday evening was cause for optimism, but Pat's initial attempts failed to turn up any additional cross tees. Then Pat remembered another contractor was using the same material. He called the contractor at home. Paydirt – the contractor could spare the tees, if they were replaced by the following week. So Pat arranged to pick up the tees at the contractor's site. At 3:00 am he was up and on the road. Some quick thinking and four hours of driving made the opening very grand indeed.

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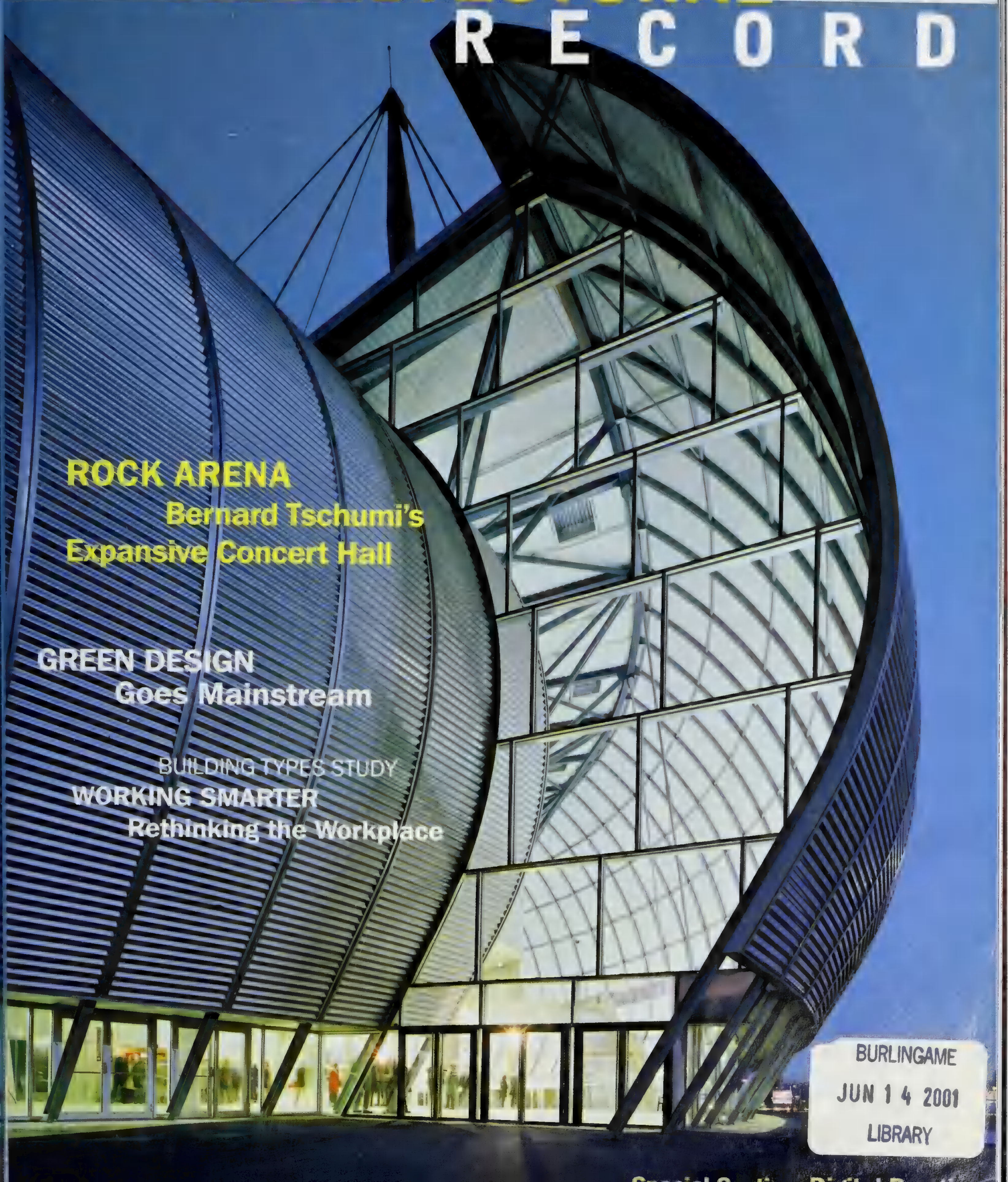

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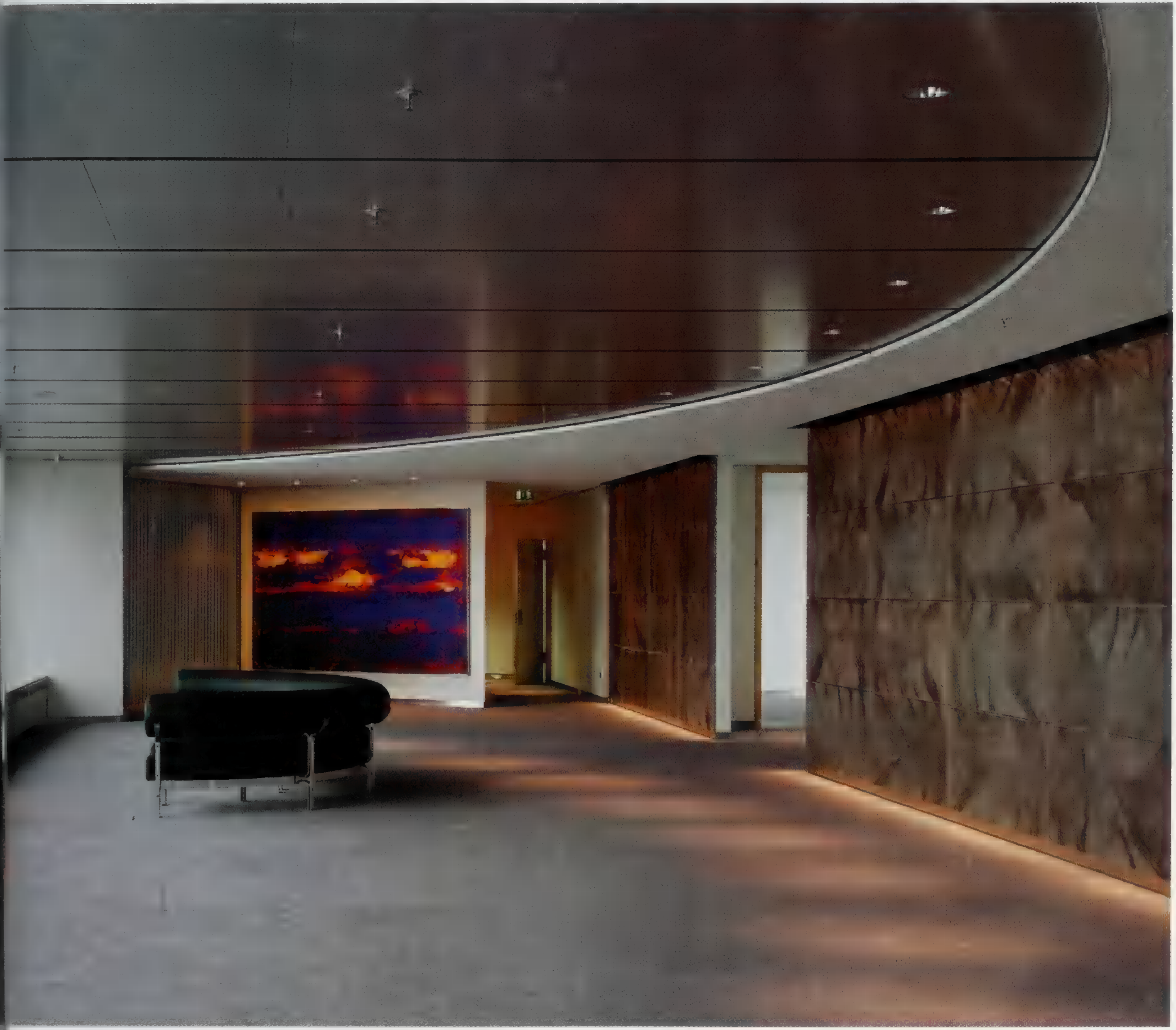

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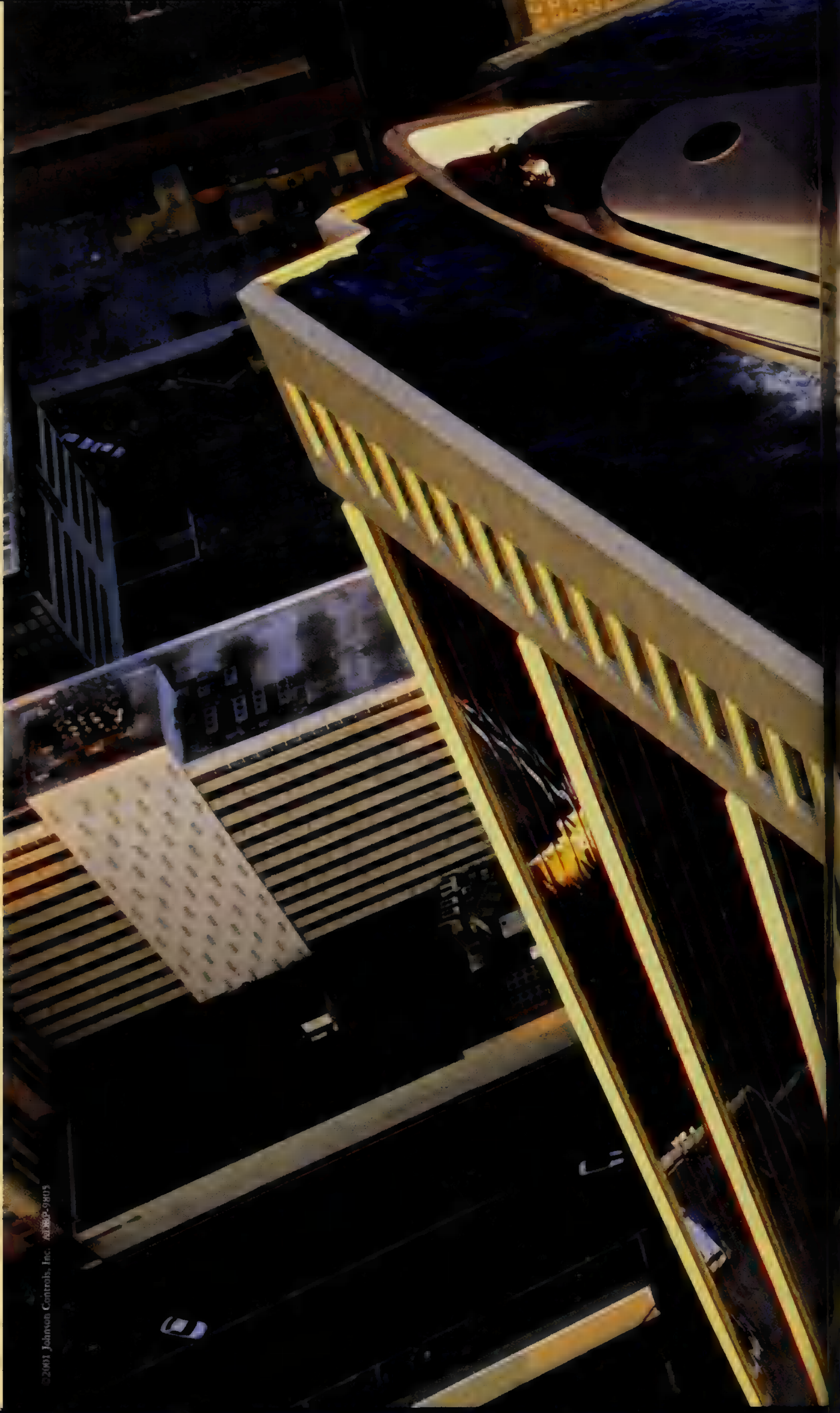

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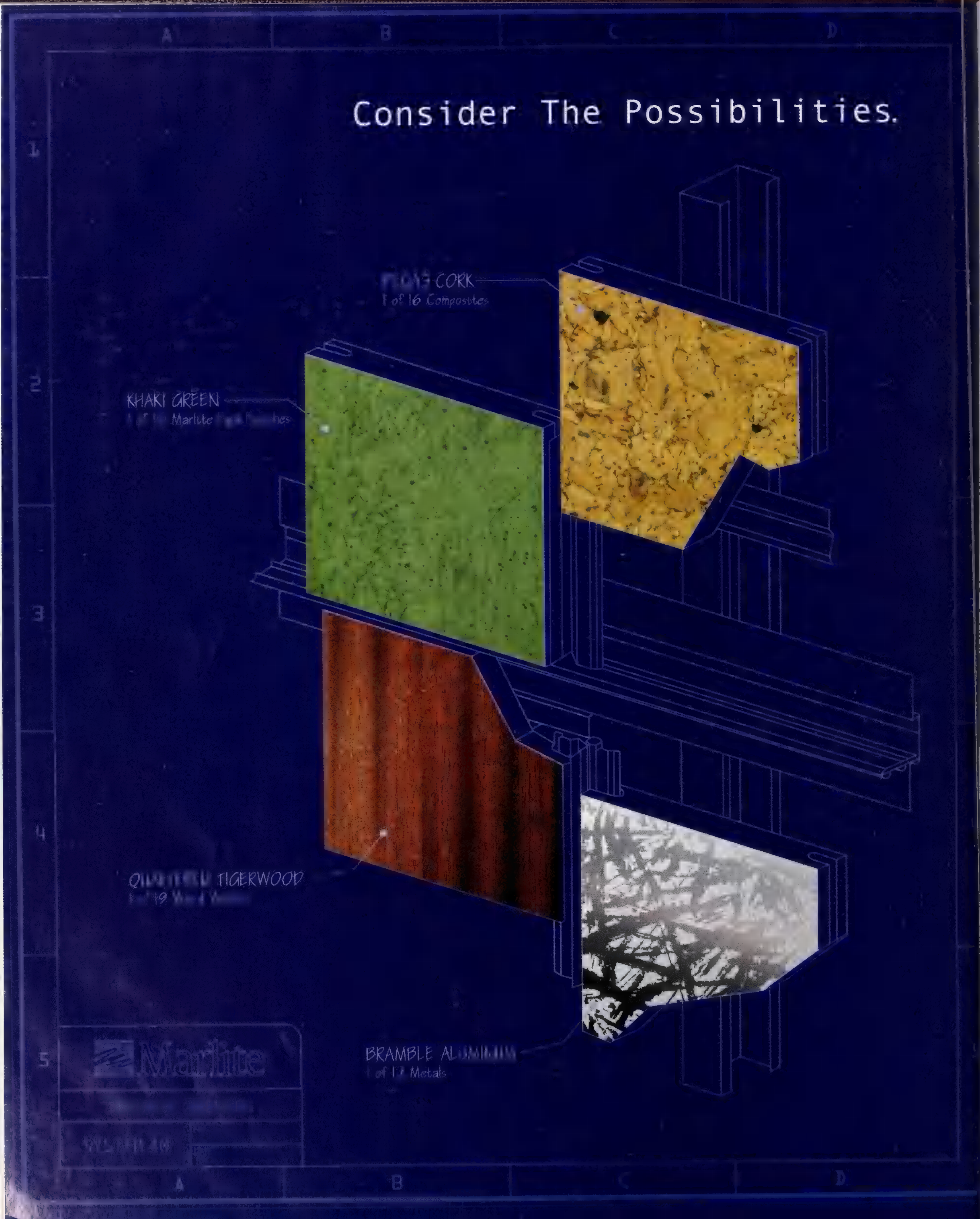
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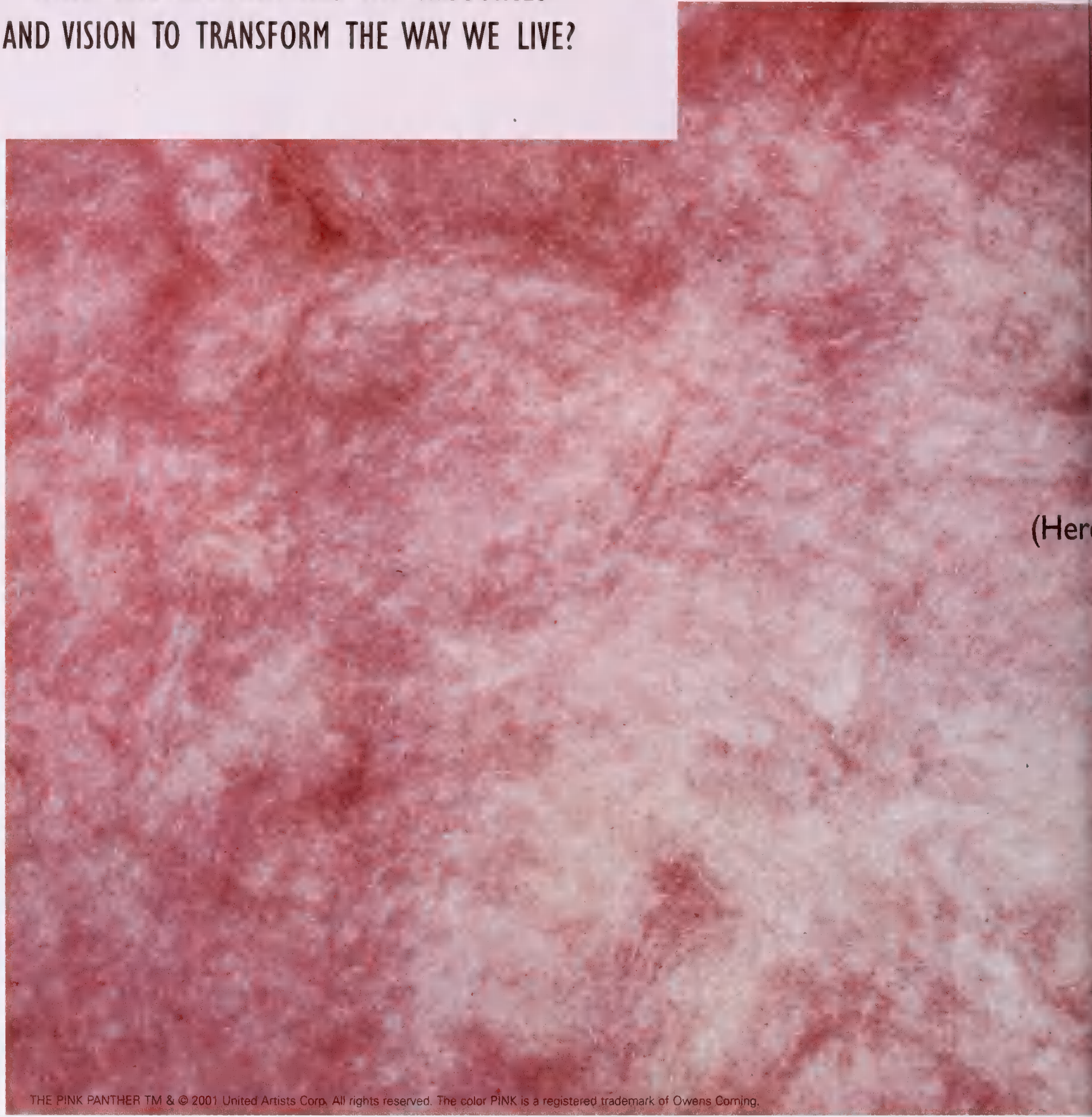

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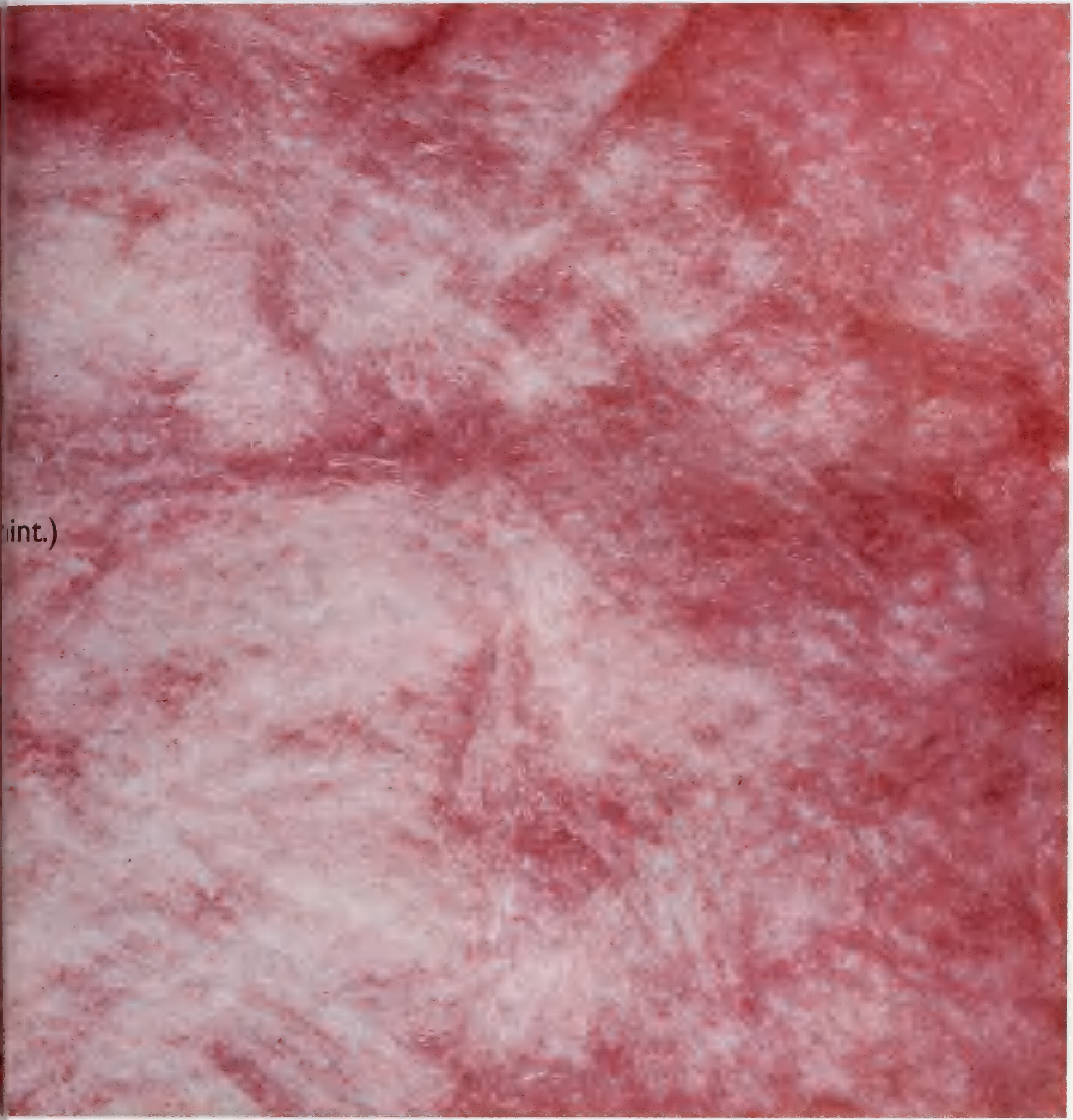

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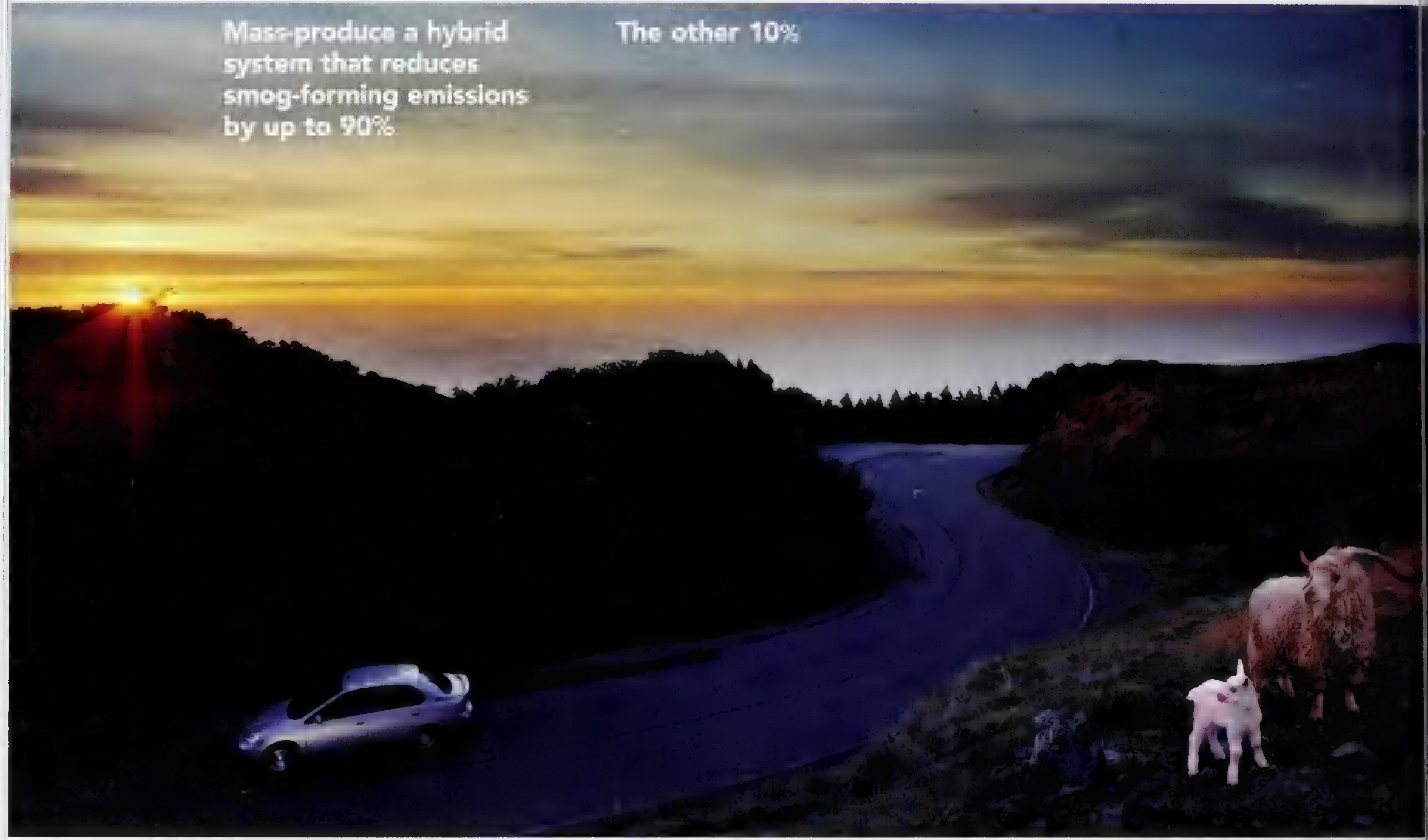
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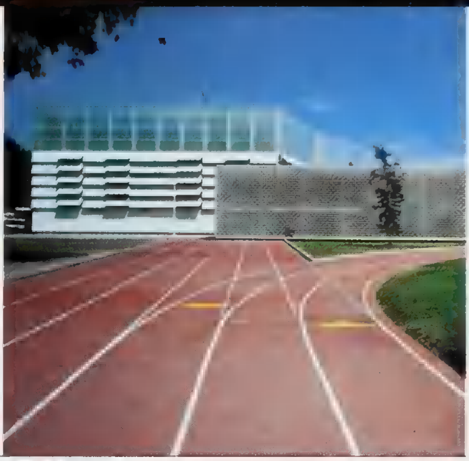
On the Cover: *Zenith Concert Hall designed by Bernard Tschumi, Photograph by Peter Mauss/ESTO*
Right: *School gym by TEN Arquitectos, Photograph by Jaime Navarro*►



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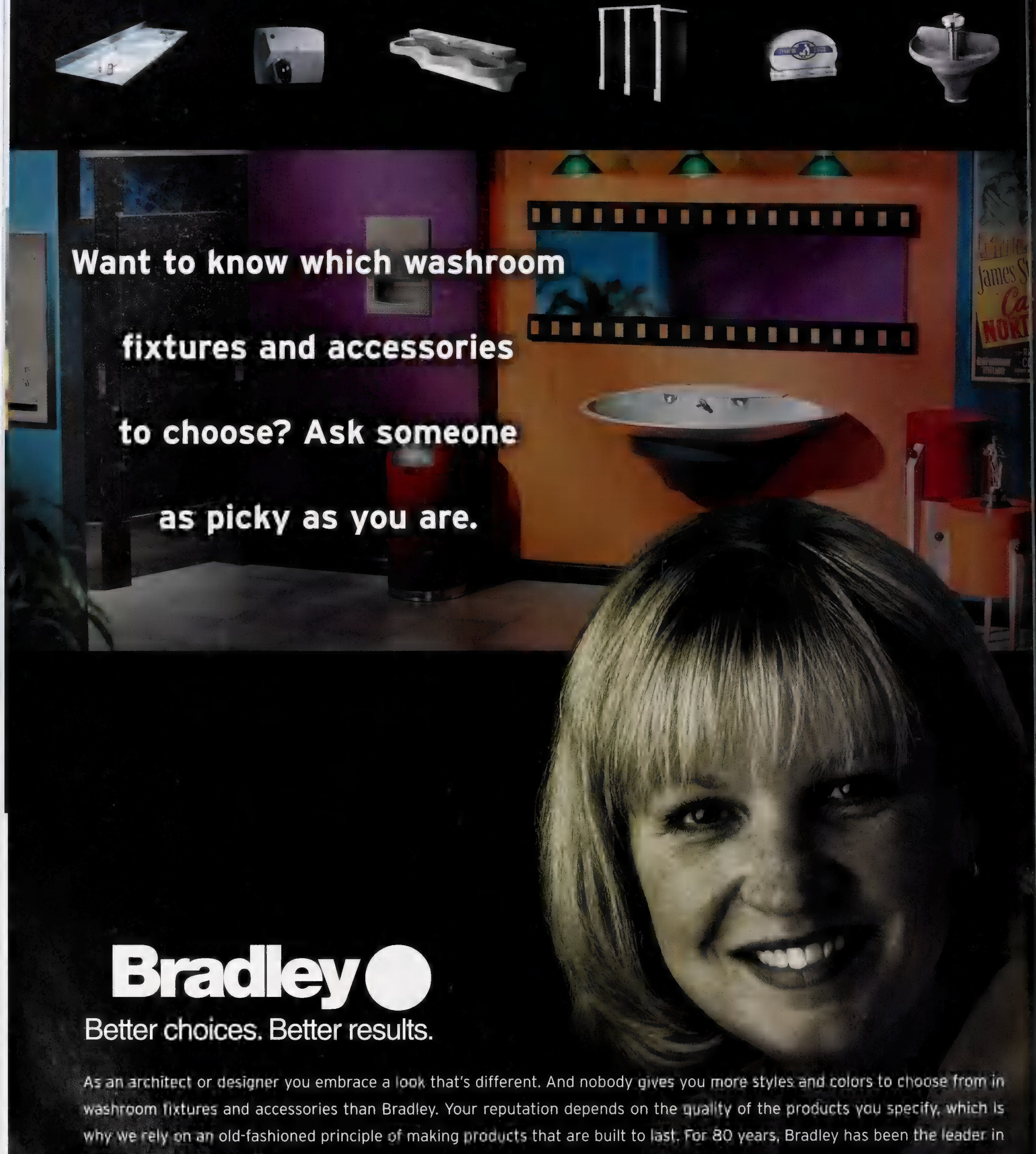

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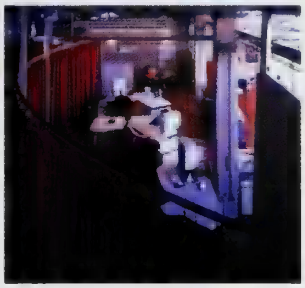
Richard Barnes

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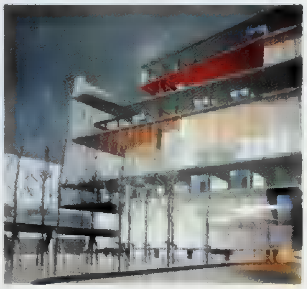

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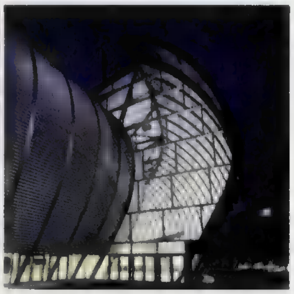
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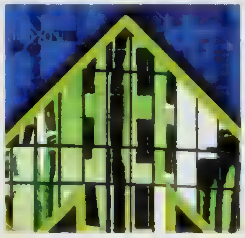

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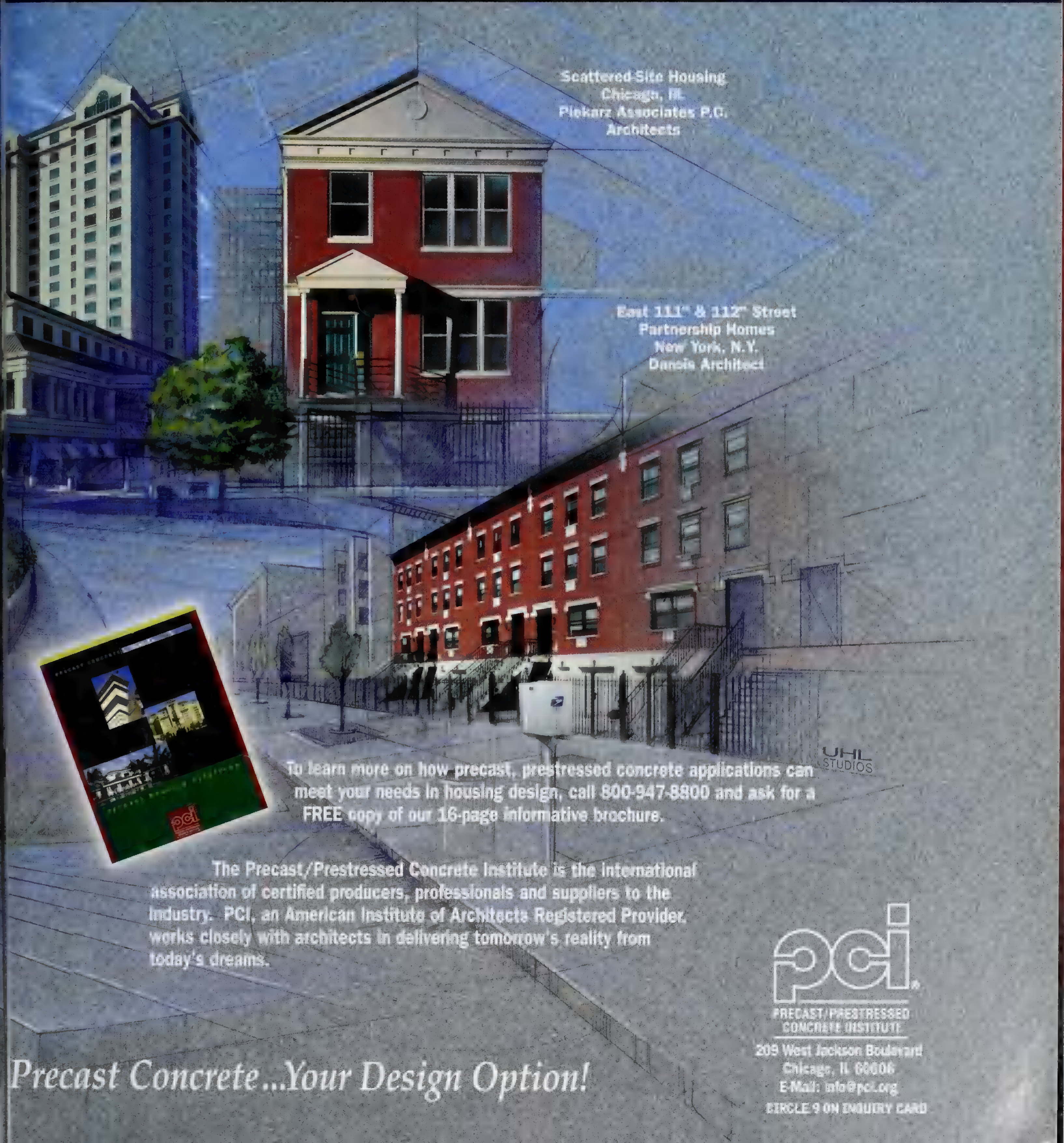

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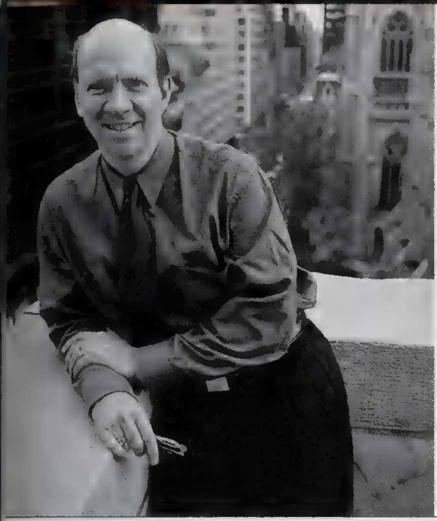

PHOTOGRAPHY: © ANDRE SOUROUJON

Editorial

More power!

By Robert Ivy, FAIA

Take the elevator to the 25th floor, climb the nearest hill and listen: The American city hums beneath you, a force made up of cars and temperature-controlled structures roaring in concentrated bursts, a voracious automaton constantly feeding itself on fossil fuel, demanding more and more power. And we hold one key to taming the beast.

The language may resort to hyperbole, but not by much. Our national addiction to cheap power has grown, not shrunk, and it is catching up with us. This summer, Americans are confronting another emergency in energy usage and supply. Ask any Californian who faces rolling blackouts—a policeman confronted with the increased risk of crime, or a researcher who faces spoiled test results. Ask a homeowner in the temperate Mid-South who faced a natural gas bill that quadrupled in one month. Could you afford to pay a $1,000 gas bill to heat your own home? Many homeowners faced similar bills this past winter, and they became instant experts, at the micro-scale, in insulating to limit infiltration and in lowering thermostats.

Where can the beleaguered country look for help? Not to Washington, apparently. At the federal level, the Bush administration has embraced increased supply, rather than conservation. According to the energy policy just released by the administration, efforts will focus on additional drilling for oil in Alaska and on other sensitive public lands, and in increased power production with nuclear fuel, coal, and natural gas. We clearly need more energy, but this is at high cost to all of us. Simultaneously, the administration policies marginalize conservation of resources, an approach consistent with their previous actions, including reneging on the worldwide Kyoto accords and flip-flopping on carbon dioxide emissions. The frantic states, by contrast, are already taking action. According to the New York Times, *"California has an ambitious plan intended to cut peak power use this summer by 5200 megawatts, or almost 10 percent." Take note. California's new code for building construction, the nation's most restrictive and conservation oriented, applies this summer after June 1 in the most populous state. How we are charged for usage will change as well. Power companies will offer declining costs, based on reduced consumption, and other states should follow the march toward conservation. Architects' clients will not take long to cut consumption.*

For architects, the issue is nothing new. We embraced sustainability in the built environment over 30 years ago as an outgrowth of the expanding ecological awareness movement of the 1960s. After an early gestation as a sort of benevolent cult in the 70s, sustainability has evolved, not as a singular goal, but as one characteristic, one vital component, in total design. Contemporary proponents maintain that green architecture is not a religion, but what any well-considered project should be.

Ironically, this crisis may breed opportunity for architects, since buildings account for 36% of total energy consumption, according to the U.S. Department of Energy, the largest percentage of all energy use, in a country with only 5% of the world's population. The fact is, without incurring greater cost our expertise can help at all scales throughout the sustainability spectrum without greater cost. Basic principles of orientation, attention to site, and climatically responsive design, including passive heating and cooling principles, can radically change building performance with minimal effort. Material choices, efficient lighting and heating, and wall and fenestration systems affect long-term power usage, and dollars. Now is the time to promote our knowledge and abilities for clients and whole communities.

While true sustainability involves more than energy awareness, this power crisis may serve as a wake-up call to architects and the clients and communities that they serve. Now is our time to speak up for the whole environment. Now is the time to lobby for changes to the tax laws that give unrealistic advantage to accelerated depreciation schedules and throw-away structures. Now is the time to promote our knowledge and abilities. The message is sustainability, one characteristic of real value, and we can gain the nation's attention while society needs our skills. That's real power.

Robert Ivy

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Letters

School space squeeze

In response to "A New Era in School Construction Begins" [FEBRUARY 2001, page 155], here's another issue for architects to consider. When our library was being renovated in the early 1990s, we were told that additional storage space was unnecessary in "a library for the 21st century"—i.e., one with digital capability. Though our library is beautifully designed, alas, we still need more storage space! Other erroneous predictions were that students wouldn't need books or magazines anymore. Yet our book collection of 15,000 thrives, and our subscription have increased to approximately 100 magazines, which are kept on file for five years. Our students use all these materials extensively in addition to accessing our online databases from classrooms and home. Architects must remember that when designing a space, it would be wise to consult with the people who actually use it.

—Katherine Cagle
Library/Media Coordinator
R.J. Reynolds High School
Winston-Salem, N.C.

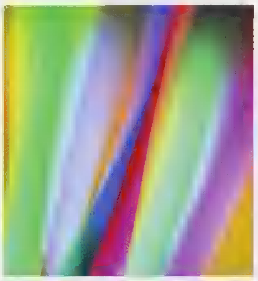
Calendar conflict

Every May, architecture faculty members try to participate in events surrounding the important graduation ceremonies of their students. Yet, at exactly the same time, the AIA convention is held—which is arguably the most important "ceremony" for the profession as a whole. While many architects still see themselves as heroic figures, none of us can be in two places at the same time. The AIA convention is the premier opportunity to bring educators and practitioners together, and yet the AIA continues to hold its convention at the busiest and most demanding time of the year for the newest members of the profession and the professionals who educate them. Practitioners, often AIA component leaders involved in their local schools of architecture, are regularly forced to choose between events. Similarly, in an informal survey we conducted via *ArchVoices* intern newsletter last year, a majority of student readers cited "graduation" or "finals" as a primary obstacle to attending the AIA convention. While the AIA's convention dates have been set through 2005, it is time for it to demonstrate its commitment to students and educators by moving subsequent convention dates to a more accessible time.

—John Cary Jr., Assoc. AIA, Casius Pealer, Assoc. AIA, coeditors, ArchVoices

Immaterial world

Your recent paean to materiality [MARCH 2001, page 91] reinforces the errant—but widely shared—perception that achievement in architecture resides in an object's uniqueness and materiality only, instead of how these very qualities affect human beings, as well. Your article illuminates no public or human dimension of materiality and, therefore, nothing of larger social value. What of cultural and political issues within materiality? What of labor, sustainability, cost? These and other questions are not incidental to



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CIRCLE 12 ON INQUIRY CARD

the human act of making objects—they are fundamental to it.
—Christopher Monson, AIA
Mississippi State University

Colorado or California house?
I was thoroughly disappointed by the lack of originality and inappropriate design to site relationship of the ARO house headlining your Record Houses section [APRIL 2001, page 114]. A glass house belongs in L.A., not at an elevation of 10,000 feet in Telluride, Colo. Maybe the architect should have done some heat-loss calculations for a cold-weather climate where the average temperature is only above 70 degrees four months of the year. This type of irresponsible design is part of the reason for our recent and future energy crisis. It looks good in the glossy photos but doesn't make much sense. I know the clients sign the check, but it is the architect's responsibility to promote smart, sustainable design.
—Kevin Beytien
Boulder, Colo.

The money isn't there
You can tell that the members on the National Architectural Accrediting Board (NAAB) are far from completing their own educations. When I heard that the board was studying the repercussions of accrediting only master's programs, I was truly angered [DECEMBER 2000, page 34]. Am I alone in reporting that I had about $30 to my name at the end of my five-year undergraduate education? According to a major university's survey of the starting salaries for graduates, architecture sank right to the bottom of the list, falling below related disciplines like engineering and computer science by as much as $10,000 to $25,000. Therefore, how is the average graduate to pay for his or her extra schooling? Forcing all those who wish to become architects to pay for graduate school will only serve to reduce drastically the number of architects entering the field. Good people are already hard to find. Low salaries pushed many of my fellow graduates into other fields. They were talented people who would have made fine architects. Besides, a master's degree doesn't translate into more billable hours. It's just more school.
—James A. Mehaffey, AIA
Lancaster, Pa.

Perils of Studio Culture
Last November an architecture student was killed in a car accident during finals week because he fell asleep at the wheel after pulling many all-nighters on his studio project. As a result, the AIAS initiated the Studio Culture Task Force, which investigates the variety of unhealthy and dangerous practices that exist in educational institutions across the country. These include sleep deprivation, injury, and drug use. Some students, professors, and practitioners already believe the current studio culture (encouraging long hours) is unreasonable. Others view all-nighters and exhaustion as a necessary rite of passage. We must put an end to this misconception in the best interests of students and the future of the profession.
—Scott Baldermann, AIAS President, AIA Student Director

Corrections
Harper Partners should have been credited as the architects for the Ann Storck Center, in Fort Lauderdale, Fla. [MAY 2001, page 174]. The Williams Natatorium at Cranbrook [MAY 2001, page 113] is in Michigan, not Minnesota. The firm 1100 Architect designed the Irish Hunger Memorial [MAY 2001, page 53], and the name of David Piscuskas, was misspelled. An incorrect photo ran with the DuraCast finish system for Centria's Series panels [Product Briefs, MAY 2001, page 368]; the photo depicts one of the Dimension Series' patterned stainless-steel options, instead. Shigeru Ban's "Naked House" [APRIL 2001, page 150] uses wood braces, not steel.

E-mail letters to:
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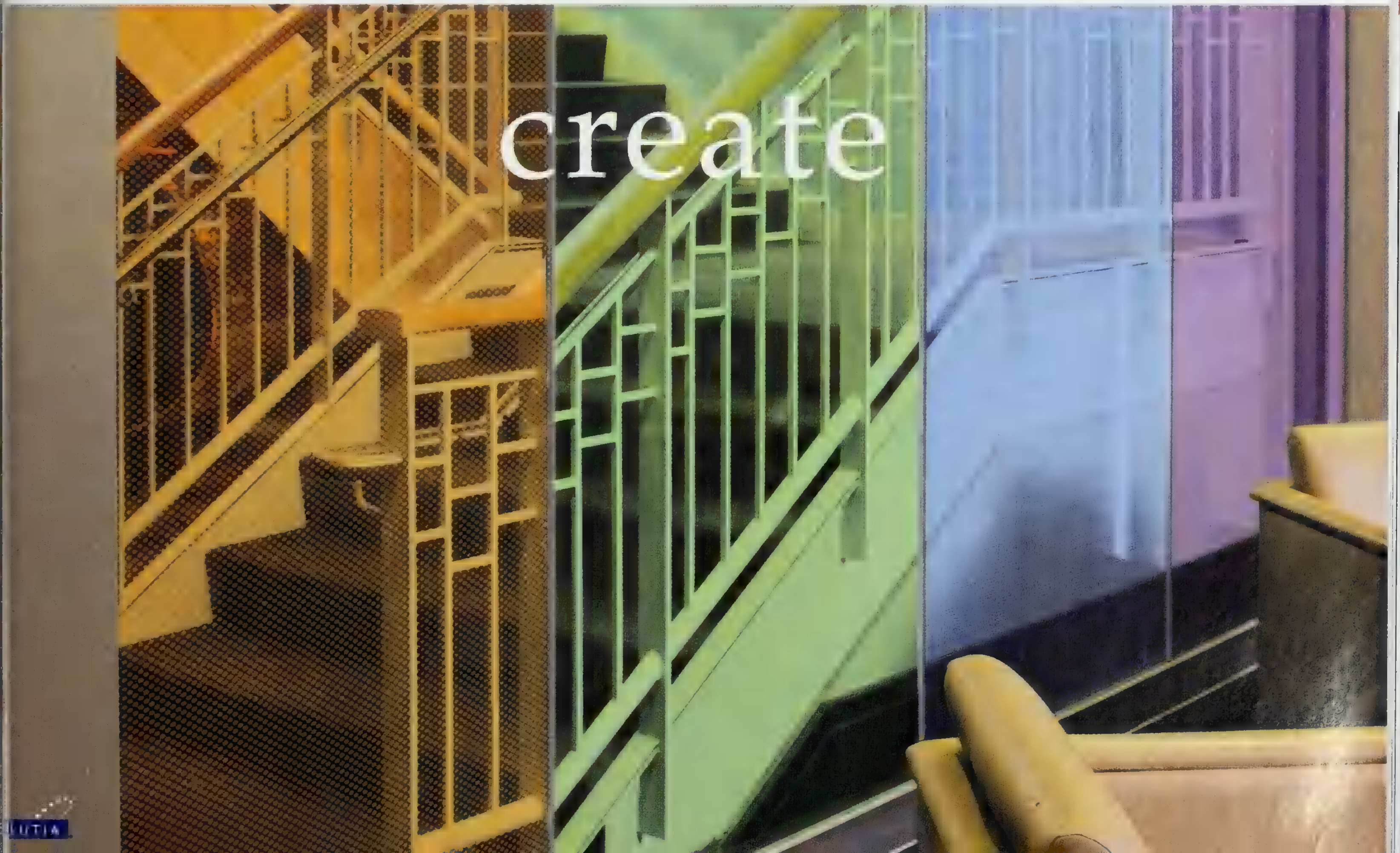

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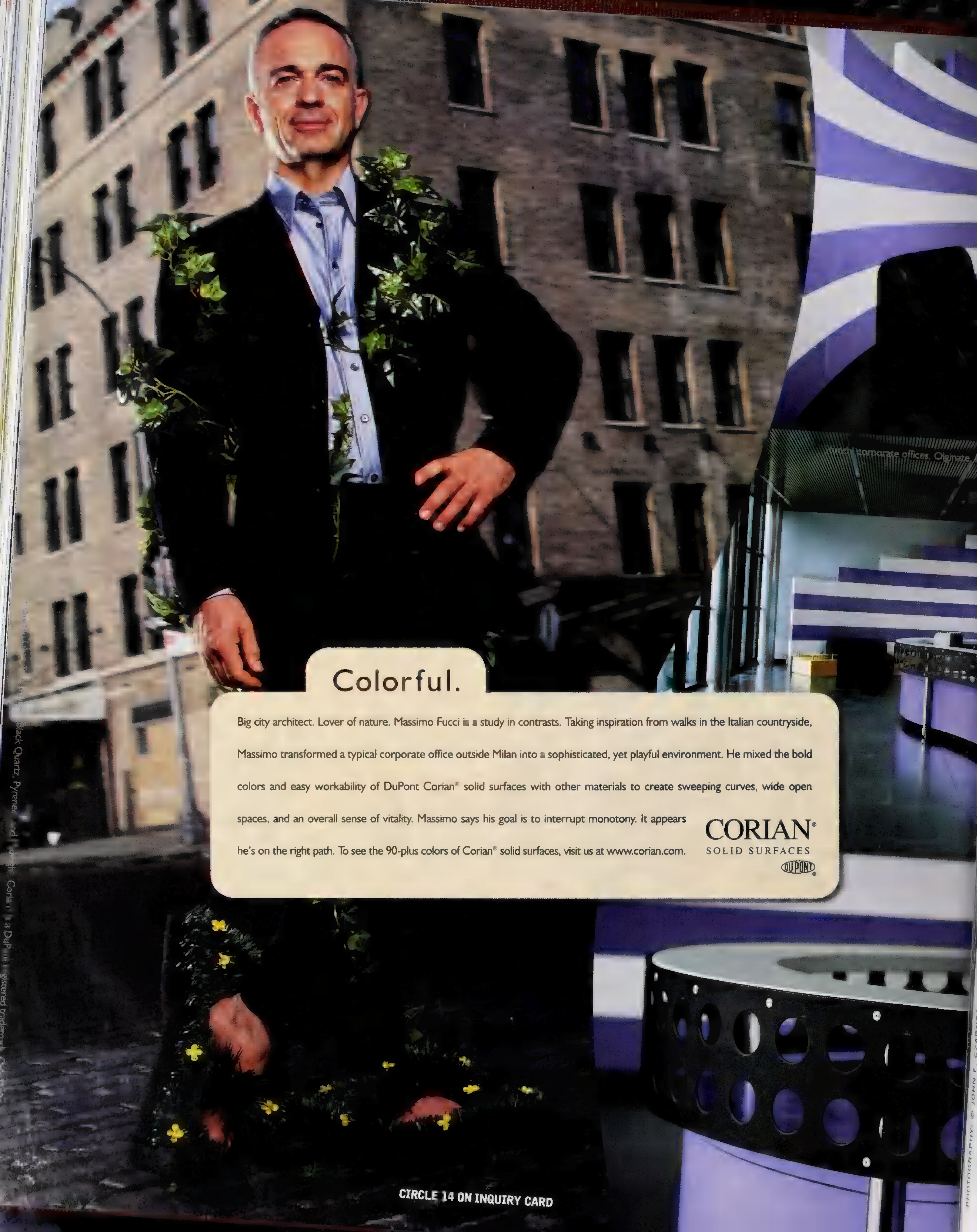

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CIRCLE 14 ON INQUIRY CARD

Record News

Highlights AIA finances p. 28
Piano addition for Art Institute p. 33
Holl wins Cornell competition p. 35
Playing Crown Hall p. 37

Architects inspired to build community at Denver AIA convention

Susan Stamberg (left) and Santiago Calatrava (center) delivered theme presentations. The 2002 AIA executive committee (right photo, left to right) includes: (top row) First Vice President Thompson E. Penney, FAIA; President Gordon H. Chong, FAIA; Vice President James A. Gatsch, AIA; (front row) Treasurer Douglas L. Steidl, FAIA; Secretary Stephan Castellanos, FAIA; EVP/CEO Norman L. Koonce, FAIA; Vice President Edward Kodet, FAIA; Vice President Eugene Hopkins, FAIA.

Although all hotels in downtown Denver were booked solid and the convention center was relatively small for the crowd, attendees at the 133rd convention of the American Institute of Architects (AIA) had plenty of opportunities for inspiration and education. Held May 17–19, the convention themed "Leaders and Partners in Creating Community" had the third largest attendance of any AIA convention and, with more than 600 exhibiting companies at Expo2001, the second largest expo in AIA history.

"We had hundreds of comments from members on how they enjoyed and benefited from the convention," says Norman Koonce, FAIA, EVP/CEO of the AIA (see story on AECdirect and AIA finances on the following page).

Nearly 16,500 people, including approximately 7,000 architects, attended the convention. Only the 2000 convention in Philadelphia and 1998 convention in San Francisco had larger attendance. "We thought that the attendance would not be as high as it was," say Koonce. "The support and enthusiasm from the state AIA component and the city and state were outstanding."

PHOTOGRAPHY: © JOHN E. CZARNECKI (ALL)

AIA business

Delegates to the convention passed a resolution from the floor, titled "Design and Energy Efficiency Initiative—Committee on the Environment." The resolution names a committee to assist government and private-sector leaders in developing the National Energy Policy for Building Codes and Standards.

Delegates voted to extend a $50 annual assessment per architect member for three years, through 2004, to finance the advertising campaign that began in 1998. In 2003 and 2004, the assessment will be adjusted in an amount equal to the change in the Consumer Price Index for the preceding 12-month period. A successful resolution sponsored by AIA Philadelphia supported educational and licensing standards; it encouraged the separation of the licensing exam into one portion taken upon completion of a professional degree and a second taken upon completion of the intern development program. A proposed bylaw change that would have lengthened the term of AIA vice presidents from one year to two years failed.

Thompson E. Penney, FAIA, of Charleston, S.C., was elected 2002 first vice president/president-elect. Penney, the director from the South Atlantic Region, is president and CEO of LS3P Associates, a 185-person firm in Charleston and Charlotte. Penney will be president in 2003, following 2002 President Gordon Chong, FAIA, of San Francisco, and 2001 President John D. Anderson, FAIA, of Denver. James A. Gatsch, AIA, Eugene Hopkins, FAIA, and Edward Kodet, FAIA, were elected AIA vice presidents for 2002. Douglas Steidl, FAIA, was elected treasurer for the 2002–2003 term.

Theme presentations

Susan Stamberg, special correspondent for National Public Radio (NPR), was the opening theme speaker. While making the comparison to NPR's community of millions of listeners, Stamberg spoke of how architects are designers of community. An ebullient Daniel Libeskind presented five of his museum projects, including his design for the addition to the Denver Art Museum [APRIL 2001, page 32]. Libeskind awed the standing-room-only crowd, as did the visionary architect/engineer Santiago Calatrava. Calatrava inspired the architects with his projects—shown in a lengthy presentation followed by a video of his work set to chamber music—which clearly demonstrated architecture as an art. His bridges, buildings, and sculptures left slack-jawed attendees to ask, "How does he do it?"

Construction outlook

In a presentation on the state of the construction industry, F.W. Dodge Vice President Robert Murray said the market overall is not as robust as it was a year ago, but growth, though slowed, remains evident.

John E. Czarnecki, Assoc. AIA

The Denver Convention Center, site of the 2001 AIA convention.

FUTURE AIA CONVENTIONS

2002
Charlotte, May 9–11

2003
San Diego, May 8–10

2004
Chicago, June 10–12

2005
Las Vegas, May 12–14

OFF THE RECORD

The Cleveland Museum of Art has announced six finalists in its competition for an expansion and renovation: Beyer Blinder Belle of New York, Foster and Partners of London, Frank O. Gehry & Associates of Santa Monica, Calif., Pei Cobb Freed & Partners of New York, Rafael Vinoly Architects of New York, and David M. Schwarz/Architectural Services of Washington, D.C. A winner will be chosen this summer.

The American Academy in Rome has announced winners of the 2001–2002 Rome Prize. Recipients in architecture are Alexander Kitchin and Evelyn Tickle of Charlottesville, Va., and Kelly D. Powell of Detroit. William H. Fain Jr., FAIA, of Los Angeles won in the design arts category. In historic preservation and conservation, winners are Elizabeth Riorden of Cincinnati and Ellen Phillips Soroka of Phoenix.

Construction has started after a May 24 groundbreaking for the Contemporary Arts Center in Cincinnati by Zaha Hadid. The $34.1 million building will be Hadid's first in the United States.

The Minneapolis Public Library has begun an architect-selection process for a new 400,000-square-foot building that will include a central library, planetarium, retail, and parking in downtown Minneapolis. Architects must submit qualifications by June 12, and a shortlist of firms will be announced on or about June 26. The shortlisted firms will submit detailed proposals by July 24.

The new Terminal 4 at Kennedy Airport in New York officially opened May 24. Skidmore, Owings & Merrill designed the $1.4 billion terminal.

Centro Kursaal in San Sebastián, Spain [MAY 2000, page 212] by Rafael Moneo won the Mies van der Rohe Prize as the best work completed in the European Union (EU) in 1999–2000. The EU sponsors the prize.

Faced with dissolving AECdirect, AIA assesses financial health

The financial health of the American Institute of Architects (AIA) is on shaky ground, but a plan is in place. Due primarily to the dissolution of the AECdirect Web site, coupled with a deficit spending from 1997 to 1999, the AIA now has a total net worth of negative $5.6 million. The AIA lost $4.4 million in net assets directly attributable to the consolidation of the AECdirect costs into its budget.

At its May 15 meeting, the AIA board of directors approved a plan to reduce the deficit and increase the AIA's total net worth to $2.5 million by the end of 2003. Cost reductions include cuts in board expenses, advertising, contributions to related organizations, and scholarships.

"I just want all members to know that we're being completely candid on financial issues," Norman Koonce, FAIA, EVP/CEO of the AIA, told RECORD.

In a May 8 letter to all AIA members, Koonce outlined the state of the organization's financial health. The letter was sent to inform members prior to the AIA annual meeting at the AIA convention in Denver, May 17–19. "We had a large number of members [at the convention] who expressed appreciation that we sent the letter and that we were very candid in the letter," Koonce says. "They were supportive of setting an attainable goal. It was very comforting and reassuring."

CHANGE IN AIA NET ASSETS, 1996 TO 2003

1996
$9 million

1999
$1.33 million

2000
$715,000

TODAY
-$5.6 million

2003
$2.5 million (projected)

The origin of the current dilemma lies in past decisions and management. In the late 1990s, Koonce writes, "AIA financial oversight was unacceptably weak, and many practices had contributed to a steady weakening of our overall financial condition." At the same time, supplemental dues were eliminated.

The overall financial situation was weakened by the need to dissolve AECdirect, the Internet-based work site for the design and construction industry in which the AIA was majority stakeholder. [Editor's Note: McGraw-Hill, publisher of RECORD, was one of a number of minority investors in AECdirect.] It was assumed that AECdirect, like many dot-com ventures, could have been a revenue-generating Web site. After one year, AECdirect has ceased operation.

"I JUST WANT ALL MEMBERS TO KNOW THAT WE'RE BEING COMPLETELY CANDID ON FINANCIAL ISSUES." —KOONCE

Koonce says that the AIA has strengthened its financial management within the past year, with a balanced budget in 2000. Cash flow is now well managed, and the organization's reserve funds exceed the amount mandated by board policy. The loss in net assets, though, precipitated the need to cut costs.

To deal with the loss in net worth, the AIA management, executive committee, and finance committee have prepared a cost-reduction plan. Taking primary responsibility, the AIA board of directors chose to cut board expenses by $650,000 total through 2003. "The board has prescribed cuts that will not be in areas [absolutely essential to] architects," Koonce says.

The AIA's operating budget for advertising will be cut by $640,000 per year in 2002 and 2003, although delegates at convention voted to extend an assessment of $50 annually per architect member for three years (through 2004) to finance the advertising campaign. The assessment revenue will provide primary funding for the continuation of the campaign that began in 1998.

Contributions to related organizations (such as ACSA, NAAB, AIAS, AAF, and the Young Architects Forum) will be cut by $250,000 per year in 2002 and 2003—a 25 to 30 percent reduction. The board expressed a desire, though, to reinstate contributions to collateral organizations as a high priority. The AIA has contractual agreements for contributions to some organizations that will continue to be met.

Scholarship support will be reduced by approximately $280,000 per year in 2002 and 2003. The exact cut in this area will be determined by the scholarship committee and staff based on performance of restricted funds used for scholarship grants.

Miscellaneous operating expenses and administrative services, including meeting costs and discretionary grants, will be cut by $435,000 annually in 2002 and 2003. Koonce notes that the board does not call for staff cuts, although the number of people on staff at the national office has been severely reduced in recent years.

At the convention, some AIA members discussed the possible need for a dues assessment specifically to cover the deficit. However, delegates did not bring the issue to the floor. Koonce says the board is confident that a dues assessment is not needed. *JEC*

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CIRCLE 15 ON [illegible] CARD

OFF THE RECORD

The shortlist in the competition for the $200 million renovation and expansion of the Los Angeles County Museum of Art includes Rem Koolhaas, Daniel Libeskind, Jean Nouvel, Steven Holl, and Thom Mayne of Morphosis. An architect will be selected this fall.

[illegible] has merged with [illegible]. Their office in Washington, D.C., is now known as [illegible].

Richard Meier, FAIA, has his first commission at his alma mater, Cornell University, with a life sciences genome research facility that will be completed in 2006. Ground was broken this spring on Meier's $20 million Hospitality Center at the Crystal Cathedral in Anaheim, Calif. Meier was honored in May with a Lifetime Achievement award by the Americans for the Arts.

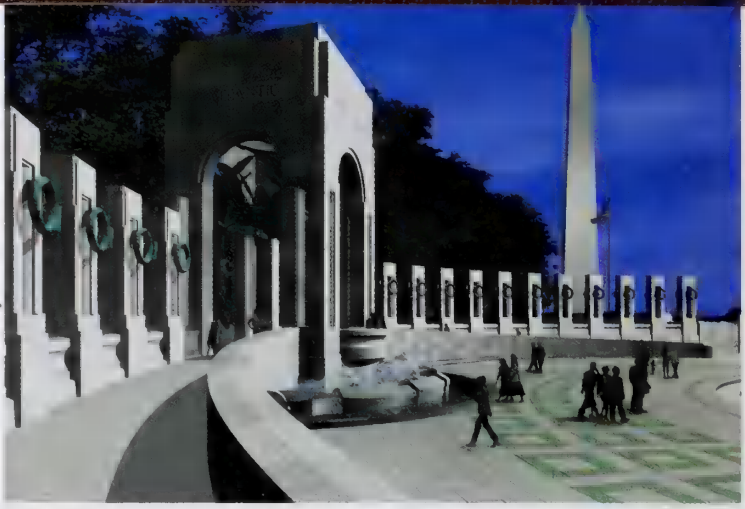
Finalists in the competition to design 46 canopies for the Metro station escalators in and near Washington, D.C. [DECEMBER 2000, page 34] are: Lourie & Chenoweth with Richard [illegible], [illegible] with Ali Omar, Arthur Cotton Moore Associates, and Weihe Design Group.

Barton Myers Associates with Architekton will design the new Tempe Performing & Visual Arts Center in Tempe, Ariz.

Work on site began in May to correct the swaying Millennium Bridge in London [AUGUST 2000, page 28; MARCH 2001, page 157]. Arup has designed a solution that employs a combination of viscous dampers and tuned mass dampers that will be installed by the end of the year.

For the Meadows Museum at Southern Methodist University, Santiago Calatrava has designed a water fountain called Wave, with rocking steel arms through which water will flow.

WW II Memorial saga may be near end



The proposed memorial design by Friedrich St. Florian may be built.

PHOTOGRAPHY: © WWIIMEMORIAL.COM

Just when it appeared that plans were set for the World War II Memorial [SEPTEMBER 2000, page 40; OCTOBER 2000, page 19] on the Mall in Washington, D.C., the process took new twists in May.

At press time, the U.S. Senate had unanimously approved a bill for construction of the proposed World War II Memorial and sent the measure back to the House of Representatives. (The House had approved a slightly different version of the measure on May 15 by a 400-to-15 vote.) Final House passage was expected by the end of May, and President Bush, who supports the memorial as proposed, was expected to sign. If approved by the House and signed by the President, the measure would validate past approvals by the National Capital Planning Commission (NCPC).

The memorial design by architect Friedrich St. Florian had passed what was considered the final hurdle for approval in a 7–5 NCPC vote on September 21, 2000. However, in a surprise move, the NCPC voted unanimously May 3 to reconsider both the site and location of the proposed memorial. The 12-member commission, which must approve the project, voted for possible review of all six of the approvals it has made on the memorial. Until May 3, the commission was focused on the question of the legality of several votes cast by Harvey B. Gantt, FAIA, a former NCPC chair. Gantt's term as chair had officially expired when he cast several votes, including his vote in the 7–5 majority that approved the final plans for the memorial.

A special extended public meeting was planned by the NCPC for June 13 and 14 to review the proposed memorial. The NCPC was planning to vote after that meeting to (1) ratify the site and design of the previous proposal, (2) ratify only the site, (3) ratify only the design, or (4) reject the proposed site and design. Even if President Bush signs the bill by June 13, the NCPC may hold the meeting as planned for design review purposes.

Opponents claim that the memorial will obstruct the Mall's visual axis and evoke imagery of Nazi-era design. *JEC*

WWW For updates on the World War II Memorial, click on News at ***www.architecturalrecord.com***

Makeup of commission changed after 7–5 vote in favor of memorial

The National Capital Planning Commission voted 7–5 in favor of the World War II Memorial on September 21, 2000. Here's the tally of the decisive vote (*names in italics* are no longer on the commission).

YES	NO
Presidential appointee Harvey Gantt, FAIA (chair)	***Presidential appointee Margaret Vanderhye***
Secretary of Interior Bruce Babbitt	**Mayor of Washington, D.C., Anthony A. Williams**
Secretary of Defense William Cohen	**Mayoral appointee Patricia Elwood**
Administrator of U.S. General Services Administration (GSA) David J. Barram	**Mayoral appointee Arrington Dixon**
Chair of Senate Committee on Government Affairs Fred Thompson (R-Tenn.)	**Chair of the Washington, D.C., City Council Linda W. Cropp**
Chair of House Committee on Government Reform Dan Burton (R-Ind.)	
Presidential appointee Robert Gaines	

Of the commission's current members, three voted in favor, four voted against it, and four (listed below) have not cast a vote on the project. The seat held by Presidential appointee Margaret Vanderhye is currently vacant. New commission members include Secretary of Interior Gale Norton, Secretary of Defense Donald H. Rumsfeld, Presidential appointee Richard Friedman (chair), and Acting Administrator of GSA Thurman M. Davis, Sr.

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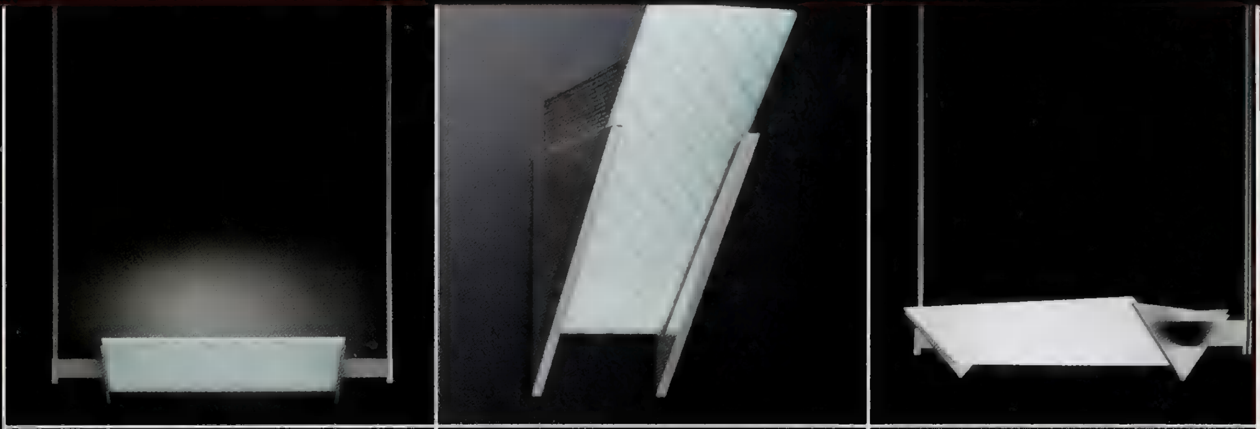

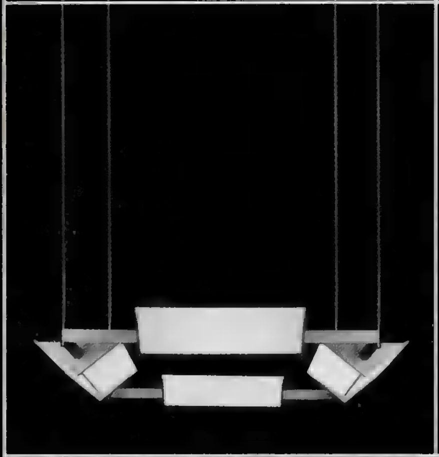

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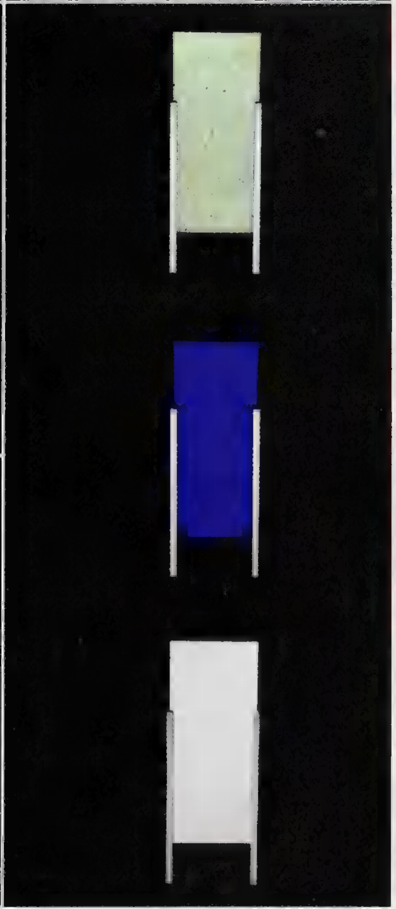

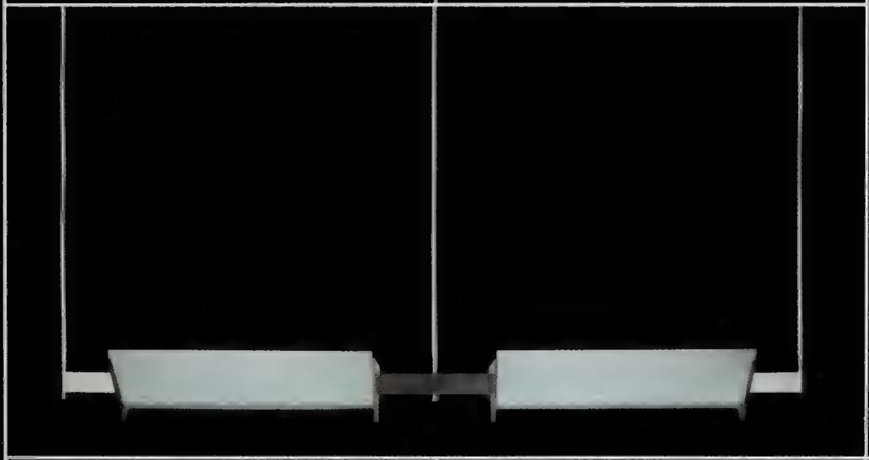

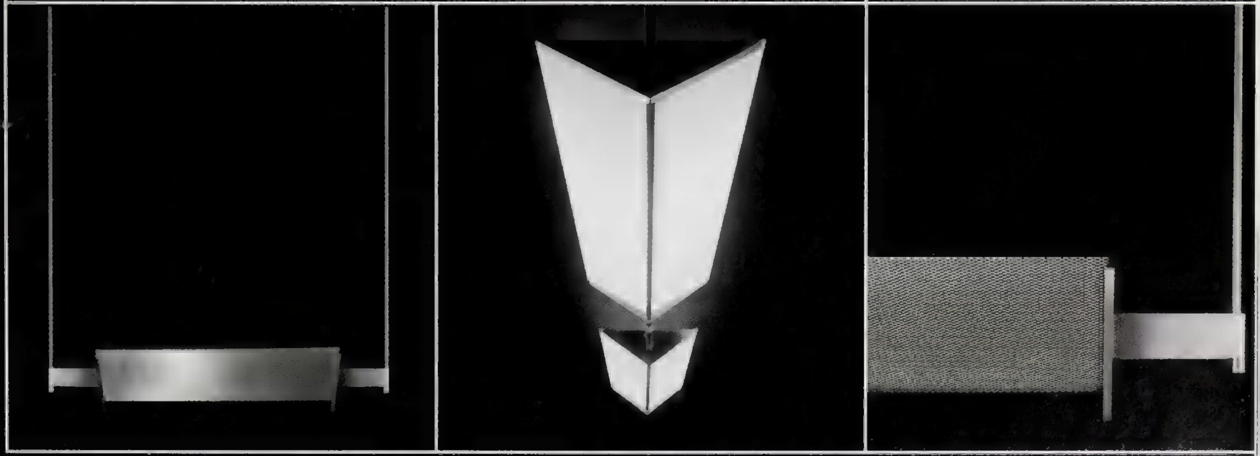

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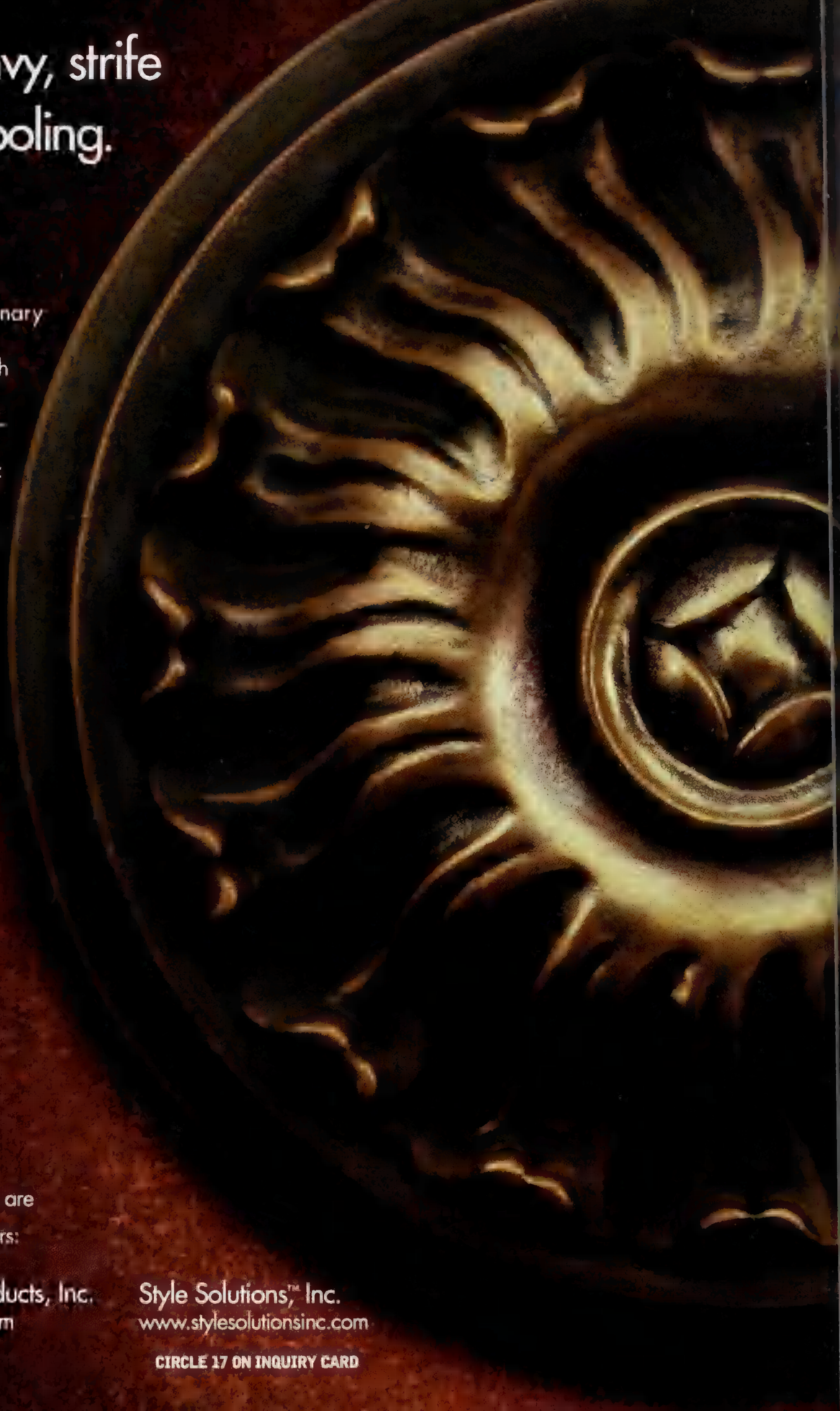

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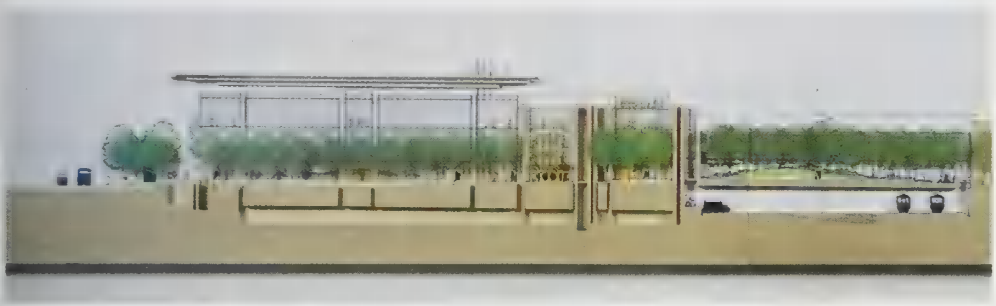


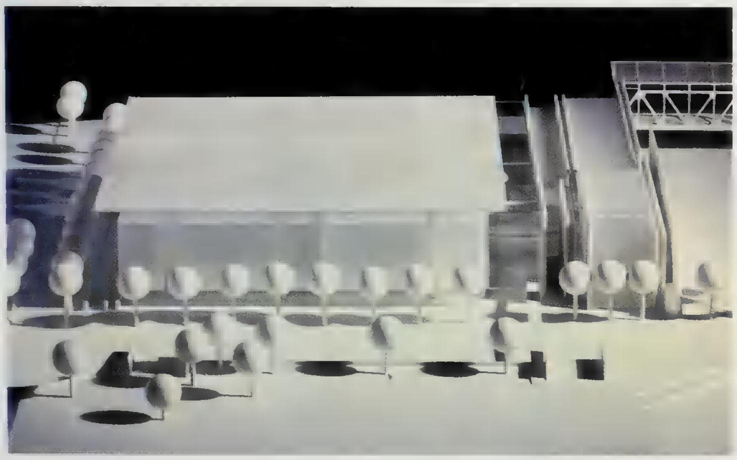
Creating a new face for the Art Institute of Chicago, Renzo Piano shows plans for $200 million museum addition

The Art Institute of Chicago unveiled in May its designs for a $200 million addition and accompanying master plan by Pritzker Prize–winning Italian architect Renzo Piano. Scheduled to open in 2006, Piano's 290,000-square-foot addition, an L-shaped, five-story building of steel, glass, and limestone, will establish the Beaux-Arts museum's 21st-century identity and clarify the museum's circulation, according to Robert Jones, AIA, the museum's director of design and construction. This will be the most dramatic reorganization of the museum since it opened in 1893.

Piano's addition will be built on the northeast end of the museum grounds, at the corner of Monroe Street and Columbus Drive. The addition's northern facade on Monroe Street will face Millennium Park, a mammoth $300 million project featuring a band shell by Frank Gehry now under construction to the north of the museum. Though the Art Institute's primary entrance will remain on the western facade of the complex along Michigan Avenue, between the famous lions, Piano's addition will have a new public entrance on Monroe Street. The axes of the original building's Beaux-Arts circulatory patterns will be extended and abstracted eastward in Piano's new building.

Piano affectionately refers to the addition's overhanging glass roof on *pilotis*, placed on the structure's skylit top, as a "flying carpet." The urbanely Modernist building will also add a separate entrance for the hordes of students who visit each year, and it will require demolition of the Goodman Theater, built in 1926 by Henry van Doren Shaw. Nearly 75,000 square feet of Piano's addition will be gallery space to consolidate contemporary and modern art collections now spread throughout the 950,000-square-foot museum.

The addition will allow more daylight to penetrate and will afford more views of the city for greater orientation and context. Indeed, the museum's dimly lit Gunsaulus Hall, a popular meeting place and home to the arms and armor exhibits, will be transformed into a glass-walled axis framing views of Millennium Park and the commuter trains that run under the museum. To ensure museum-goers remain unencumbered by Chicago's biting winter weather, Piano is now honing the conceptual plan to create a more direct route between the museum and Millennium Park's 4,500-space parking lot. A mid-block pedestrian bridge may link the museum to the park itself. *Rosemarie Buchanan*



A $200 million, 290,000-square-foot addition by Renzo Piano to the Art Institute of Chicago (above and left, view of the northern facade along Monroe Street) will include a new entrance facing Millennium Park. The addition, in steel, glass, and limestone, will open in 2006.

PHOTOGRAPHY: COURTESY THE ART INSTITUTE OF CHICAGO

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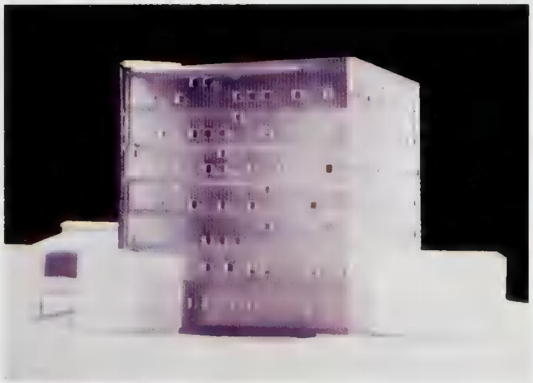
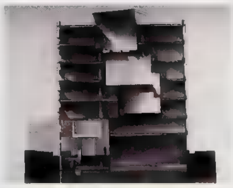
CIRCLE 19 ON INQUIRY CARD

Holl wins Cornell University architecture building competition





Steven Holl's winning design (above and left) is a cubic structure with translucent and transparent facades. Structural glass cladding will span clear between floors.

A commission to design a school of architecture building is rare. The opportunity is especially unusual when the school is one of the best in the country, and the four competing architecture firms are all well known for quality design work. That was the case in the competition to design a new home for the department of architecture in the College of Architecture, Art, and Planning at Cornell University in Ithaca, N.Y. Steven Holl, of New York, was selected for the $25 million building in an invited competition that included Thom Mayne with Morphosis, Tod Williams Billie Tsien and Associates, and Peter Zumthor. The building, to be built on a prominent location on the crest of Fall River gorge, is expected to be completed by fall 2004.

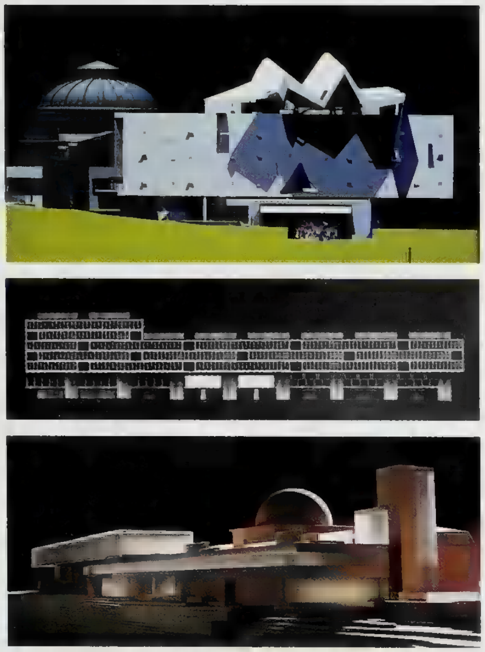
Holl's scheme was chosen unanimously by the jury, which included James S. Polshek, FAIA (chair), Terence Riley, Toshiko Mori, Heinz Tesar, Kenneth Frampton, and Carme Pinós.

A seven-story cubic mass, Holl's design is described as a "hyper cube" that will act as a gateway or lantern for that portion of the campus. Sited on a busy pedestrian path, the building will have a 24-hour accessible passage through the ground floor of the building. Three of the building facades will be clad in a recycled structural glass with inset openings that are three feet deep for three-foot-square windows. Initially the pattern of window placement was generated randomly through a computer program. The west wall, along which most of the building's core functions are congregated, will use a relatively new material—foamed aluminum—as a cladding panel. Three large seminar/critique spaces (see section drawing above), will be in the center of the building, surrounded by studios. The top seminar room will have skylights, and transparent flooring for the top two seminar rooms will allow light to filter down to all three seminar spaces.

According to the jury's written comments on Holl's design: "If constructed as designed, this brilliant design will set a new standard of excellence for Cornell's architecture."

Holl told RECORD, "In the 20th century, American architectural education was haunted by the myth of the Cornell School of Architecture. For an architect, realizing architecture for a school of architecture resembles autodidactic brain surgery. In the case of Cornell, it includes the challenge of a ghost in search of a new body."

Thom Mayne's entry featured what the jury described as a "crustacean profile" with an "oversailing roof." According to the jury, Zumthor's design is a "brilliant typological scheme consisting of a series of longitudinal studio volumes ranged on either side of a six-story, top-lit galleria." The low, linear building with three public nodes by Williams and Tsien was deemed "too attenuated in plan" by the jury. *JEC*



The three finalist schemes in the competition were by (from top) Thom Mayne with Morphosis, Peter Zumthor, and Tod Williams Billie Tsien.

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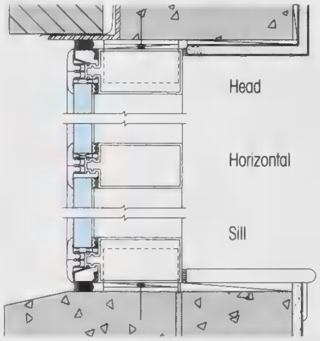

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First portion of Calatrava's MAM addition opens to public

A portion of the addition to and renovation of the Milwaukee Art Museum by Santiago Calatrava opened to the public on May 4. New gallery spaces, a museum store, and a 300-seat auditorium were inaugurated, as were expanded, renovated, and reinstalled permanent collection galleries in the existing building. Calatrava was not present for the opening.

A reception hall under the brise-soleil, a cafe, and an underground parking garage will open on September 14, 2001, and landscape designed by Daniel Kiley will be completed in October. The movable brise-soleil, the key feature of the building, might not be installed until 2002. In May, the museum was undecided on whether the brise-soleil would be constructed of aluminum, steel, or carbon fiber.

Concrete arches create a rhythm in the MAM addition.

The long, low-lying portion of the building that has opened is a link between the museum's existing buildings, by Eero Saarinen and David Kahler, FAIA, and the grand entrance and reception hall scheduled to open in September. Two gallerias (one is shown at left) flank a changing-exhibition gallery with movable walls. The gallerias and gallery space are punctuated by 38 expressive concrete arches that create a dynamic rigor. Z-shaped bands of glass with a bluish tint line the east and west gallerias. An exhibition of the work of Wisconsin native Georgia O'Keeffe opened in the new rotating-exhibition gallery.

Kahler's Milwaukee firm, Kahler Slater, has worked with Calatrava as the architect of record for the addition. *JEC*

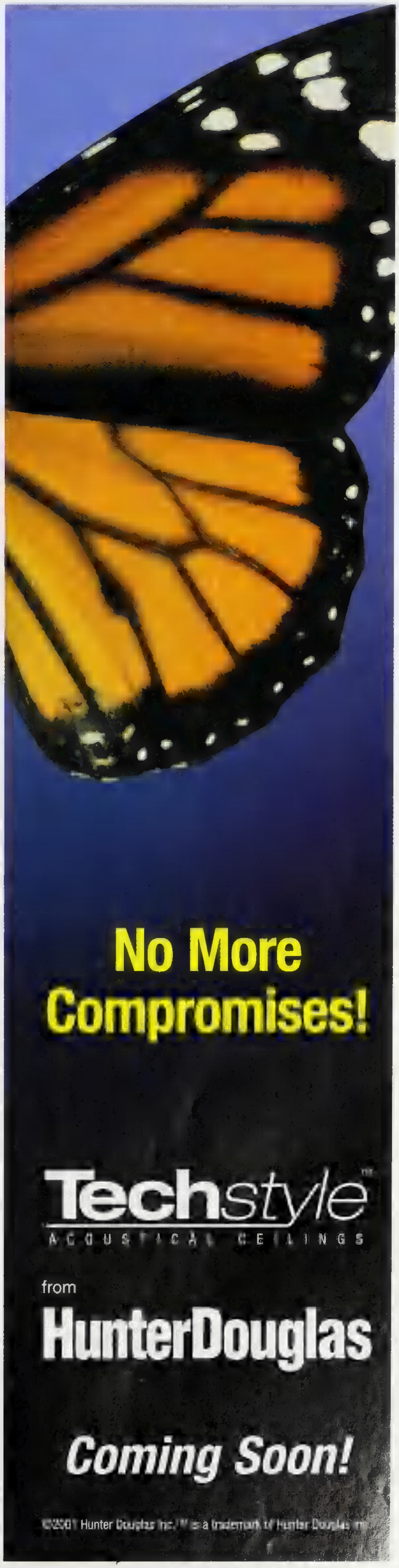
Crown Hall strung up and played as an instrument for IIT open house

Mies van der Rohe's legacy of sober material investigations rang with new significance in May at Crown Hall at the Illinois Institute of Technology (IIT). Chicago's MASS Ensemble, a conceptual music group, strung the interior volume of Crown Hall with 28,000 feet of brass wire and played the building like a guitar. Crown Hall is a candidate for National Historic Landmark status.

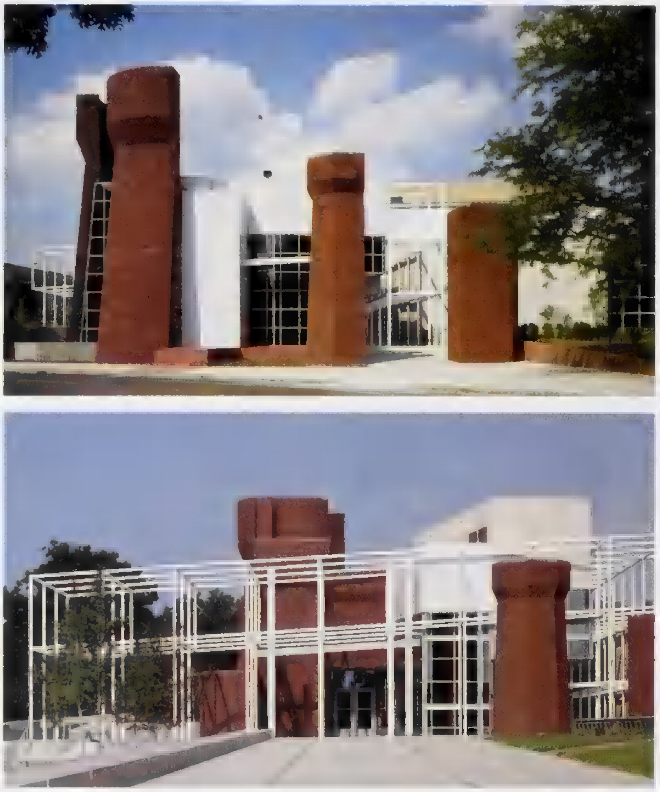
To commemorate the IIT School of Architecture's annual open house, architect and exhibit coordinator Mark Schendel reinterpreted Mies' transparency, universal space, and floating symmetry by making it hum. With barely visible metal strings that catch the occasional glimmer of daylight, MASS Ensemble plucked and rubbed the wires like moistened glass rims. Musical license wasn't the only parameter guiding their piece: "We superimposed a musical staff over elevations of Crown Hall as inspiration," said Bill Close, MASS Ensemble's founder. Close, a classically trained instrumentalist, conjured the stonemason's son by penciling in notes where the five-lined staff intersected Mies' beams.

To create the building-as-instrument, students gutted two large blocks of plywood lockers that usually serve as partitions for the school's one-room studio space. Wires were then connected to opposing walls' steel beams where they meet the ceiling. Those wires were pulled taut, harnessed like a ponytail, and fastened inside the empty locker boxes, which became guitarlike resonant chambers. Pulled through to the other side of these chambers, the wires stretched to adjacent walls where their tail ends connected to more beams. The opening performance was May 11, and the installation was struck soon after its final strumming on May 26. *RB*

PHOTOGRAPHY: © JIM BROZEK (TOP), DOUGLAS REID FOGELSON PHOTOGRAPHY (BOTTOM)



CIRCLE 22 ON INQUIRY CARD



The Wexner Center for the Arts by Peter Eisenman requires a $10 million renovation due to extensive maintenance issues.

PHOTOGRAPHY: © JEFF GOLDBERG/ESTO

Only a decade old, Eisenman's Wexner Center in need of $10 million retrofit

They don't build Deconstructivist buildings like they used to. Thankfully, some may say.

Dedicated in November 1989, Peter Eisenman's Wexner Center for the Arts on the Ohio State University campus in Columbus, Ohio, is in desperate need of repairs. The university has hired the Columbus architecture firm Schooley Caldwell Associates for architectural and engineering services related to a planned $10 million Wexner Center renovation/retrofit.

The Wexner Center for the Arts was a key commission for Eisenman, who had completed mostly small residential and theoretical projects up to receiving this job. The winning scheme in a national design competition, this was his first major public built work. Designed with Richard Trott of Columbus, Eisenman's building integrates the grid plans of both Columbus and the university, "town and gown."

Although an important building in Eisenman's career, the Wexner Center, completed in 1989, did not fare well in the ensuing years. According to the university's request for proposals (RFP): "In recent years, the Wexner Center has experienced problems including building leaks, environmental control difficulties, and operational inefficiencies involving space planning and patterns of use."

The RFP notes, however, that "the renovation/retrofit should be considered a preservation project for a landmark building. The project must be undertaken with the understanding that a successful design will have minimum impact on the original design."

Before issuing the RFP, the university hired a team of consultants to analyze the Wexner's problems. According to the RFP, the consultants found that the building has severe maintenance issues that the university did not anticipate: "Many parts of the Center's physical plant have required greater maintenance than typically found for similar systems in other campus buildings. The painted steel exterior grid has required painting every three to five years. Caulking and sealing maintenance schedules are significantly more intensive than typical campus buildings due to' the types of materials in the exterior envelope system. It is difficult to maintain temperature and humidity control in galleries due to the lack of zoning and system controls."

In addition, the RFP notes: "Leakage is occurring frequently in a number of locations in the Center and involves the masonry walls, flashing and coping, curtain wall, and skylights. The leaks have increased in number and frequency with time. Condensation is appearing in the south end of the building and elsewhere along curtain walls when exhibit walls are erected in front of curtain walls. Leakage has occurred in the pressurized piping system of the radiant heating system—the presence of water piping above some areas is not in conformance with museum practice."

Schooley Caldwell will verify the building condition and appropriate building program, develop contract documents, and be responsible for contract administration. The firm will submit contract documents by March 2002, with construction beginning in May 2002. *JEC*

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CNU gives inaugural Charter Awards

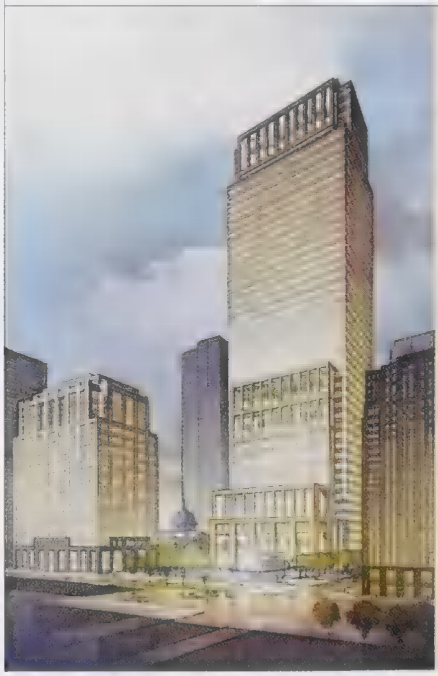
Johnson Street Townhomes in Portland, Ore., by Mithun.

The Congress for the New Urbanism (CNU) has honored 15 projects in the organization's inaugural Charter Awards. A total of 208 projects were judged on how well they fulfilled the 27 principles in the Charter of the New Urbanism. The awards were given at CNU IX, held in New York City, June 7 to 10.

Winning projects are located in 10 U.S. states and three foreign countries: **Robert Mueller Municipal Airport Reuse Plan** in Austin, Tex., by Roma Design Group of San Francisco; **Flaghouse Courts Hope VI Revitalization** in Baltimore by Torti Gallas and Partners of Silver Spring, Md.; **A Civic Vision for Turnpike Air Rights in Boston** by Goody, Clancy & Associates of Boston; **Eighth & Pearl Mixed Use Building** in Boulder, Colo., by Wolff Lyon Architects of Boulder; **State Street Renovation Project** in Chicago by Skidmore, Owings & Merrill of Chicago; **Managuita Neighborhood Plan** in Managua, Nicaragua, by Delphi Design and Development of Coconut Grove, Fla.; **New Jersey State Plan** by the New Jersey Department of Community Affairs; **Johnson Street Townhomes** in Portland, Ore., by Mithun Partners of Seattle; **King Farm New Town** in Rockville, Md., by Torti Gallas and Partners of Silver Spring, Md.; **Envision Utah** in Salt Lake City by Calthorpe Associates of Berkeley, Calif.; **Fonti di Matilde Resort Development** in San Bartolomeo, Italy, by Studio Bontempi of Gaiano, Puerto Rico; **Britton Courts Housing Development** in San Francisco by Solomon ETC of San Francisco; **Washington Township Town Center Open Space Design Standards** in Washington Township, N.J., by Brown & Keener Urban Design of Philadelphia; **Townhomes on Capitol Hill** in Washington, D.C., by Telesis Corporation of Washington, D.C.; and **Liveable Neighborhoods Statewide Codes** in western Australia by the Ministry of Planning in Perth, Australia.

CNU executive director Shelley Poticha says, "These winners are proof that the New Urbanism movement is succeeding."

The jury included Ray Gindroz, FAIA (jury chair), Jonathan Barnett, FAIA, Robert Campbell, FAIA (RECORD contributing editor), Harvey Gantt, FAIA, Laurie D. Olin, Elizabeth Plater-Zyberk, FAIA, and Anne Vernez Moudon. *JEC*



Stern to scrape Philly sky

Robert A.M. Stern, FAIA, may soon leave his mark on the skyline of Philadelphia. His firm, Robert A.M. Stern Architects, has designed a two-building, 1.7-million-square-foot complex for Liberty Property Trust. The tallest of the two buildings will be 50 stories, or 725 feet, and will be the fourth-tallest building in Center City Philadelphia. Willard Rouse III, chief executive officer of Liberty Property Trust, hired Stern for the complex, which should be complete in 2004.

The complex is planned for a block bounded by John F. Kennedy Blvd., Arch St., 17th, and 18th Streets, next to Suburban Station. The taller tower will have 1.4 million square feet of office space. A 110-foot-high winter garden will serve as entrance to the taller tower. The second tower will be 16 stories tall with 280,000 square feet of space. Olin Partnership has designed an outdoor plaza next to the winter garden. *JEC*

PHOTOGRAPHY: COURTESY CONGRESS FOR THE NEW URBANISM/MITHUN PARTNERS (TOP); ROBERT A.M. STERN ARCHITECTS/THOMAS SCHALLER RENDERING (BOTTOM)

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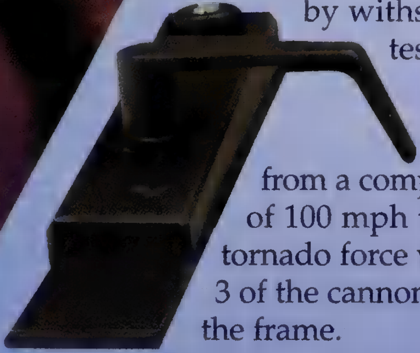

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News Briefs

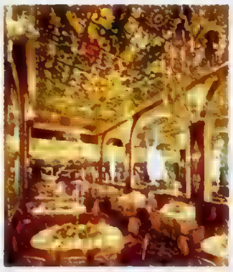
The UCLA Hammer Museum will have a greater presence and graphic identity.

Maltzan, Mau, and Blaisse have a Hammer UCLA unveiled the design in May for a $25 million expansion and reconfiguration of its Hammer Museum by architect Michael Maltzan of Los Angeles, designer Bruce Mau of Toronto, and landscape and interior designer Petra Blaisse of Amsterdam. Plans call for a 288-seat theater, expanded gallery space with four new galleries, a new primary entrance, a restaurant, and a relocated bookstore. Construction is expected to begin in 2002 and be completed in a year. The existing museum building, at the corner of Wilshire and Westwood Boulevards, was designed by Edward Larrabee Barnes.

Mau [see interview, page 65] is developing an identity program for the museum. Maltzan and Mau have collaborated on projects in the past, including the Walt Disney Concert Hall in Los Angeles by Frank O. Gehry and Associates. Maltzan had worked for Gehry at the time the concert hall was designed.

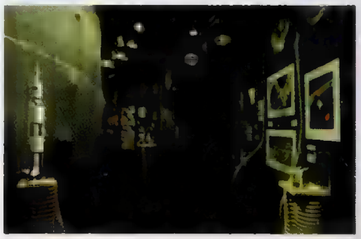
Sarah Tomerlin Lee dies An editor and designer, Sarah Tomerlin Lee died April 15 at age 90. She held various editorial positions at *Vogue* and *Harper's Bazaar* before becoming editor of *House Beautiful* in 1965. She took over her husband's interior design firm after his death in 1971 and became known as a hotel designer. Her firm became a part of Beyer Blinder Belle, where she was head of interior design from 1993 to 1997.

Russian Tea Room honored New York's Russian Tea Room won the 2001 James Beard Foundation Award for Outstanding Restaurant Design on April 30. The award honors the best restaurant design or renovation in North America since 1998. The late Warner LeRoy, owner and CEO of LeRoy Adventures, operated the Russian Tea Room and designed the restaurant's renovation.



Russian Tea Room

Art Institute launches space exhibition by Garofalo Chicago architect Doug Garofalo [DECEMBER 2000, page 82] has designed both the *Time* exhibition at the Museum of Science and Industry [APRIL 2001, page 42] and the *2001: Building for Space Travel* exhibition at the Art Institute of Chicago (above). On view through October 24, the space travel exhibit presents the work of architects, civil engineers, and industrial and graphic designers for the space program. After Chicago, *2001: Building for Space Travel* flies to Seattle, where it will be at the Museum of Flight, December 15, 2001, through May 15, 2002.



2001: Building for Space Travel

PHOTOGRAPHY: COURTESY MICHAEL MALTZAN ARCHITECTURE (LEFT TWO).

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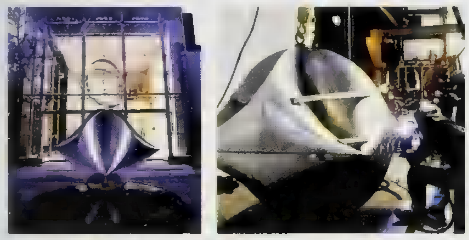
CIRCLE 27 ON INQUIRY CARD

News Briefs

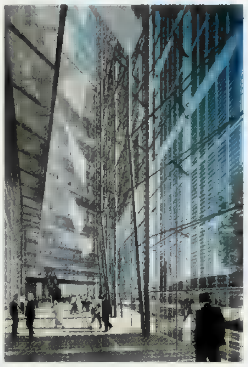
Time stands still The New York Times Capsule, designed by Santiago Calatrava, was permanently installed on April 26 outside the Rose Center for Earth and Space [AUGUST 2000, page 98] at the American Museum of Natural History in New York City. A five-foot-tall sculpture of welded stainless steel, Calatrava's capsule design was selected from among 50 proposals in 1999. Filled with artifacts of the late 20th century, the capsule is sealed until the year 3000.

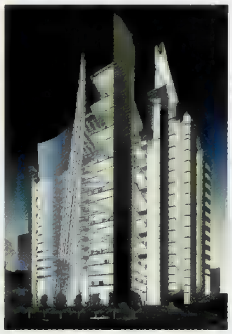


The time capsule as it was sealed (right).

The academy honors The American Academy of Arts and Letters bestowed on New York architects and partners-in-practice Henry Smith-Miller and Laurie Hawkinson its annual Arnold W. Brunner Memorial Prize, given to an architect "who has made a significant contribution to architecture as an art." Academy Awards in Architecture were given to Vincent James of Minneapolis and SHoP/Sharples Holden Pasquarelli of New York. The architects were honored at a May 16 ceremony.

Perkins & Will win L.A. federal courthouse job Perkins & Will has won a competition for the 1-million-square-foot federal courthouse to be built in downtown Los Angeles by 2007. Ralph Johnson, FAIA, will be the design architect. The finalists for the $300 million project were Skidmore, Owings & Merrill, Cannon Dworsky, and Rafael Viñoly Architects. The General Services Administration selected Perkins & Will through its Design Excellence Program. Jurors were Thom Mayne, FAIA, William Pedersen, FAIA, Peter Bohlin, FAIA, and Joseph Giovannini.





Perkins & Will's winning scheme for the federal courthouse in los Angeles.

Gehry and the Met on board with Lincoln Center plans New York's Lincoln Center for the Performing Arts is moving forward with its plans for a $1.5 billion renovation and reconstruction [MARCH 2001, page 27]. The design team now includes Frank O. Gehry, FAIA, in addition to New York's Beyer Blinder Belle and Cooper, Robertson & Partners. Landscape architect Laurie Olin is also part of the team. A master plan document is being developed and should be complete in coming months. In May, the design team discussed several options for public space configurations. One option reportedly under consideration is a glass enclosure over the central plaza.

After withdrawing from the project in January, claiming it was slighted in the planning process to that point, the Metropolitan Opera rejoined the coalition of Lincoln Center constituents in May.

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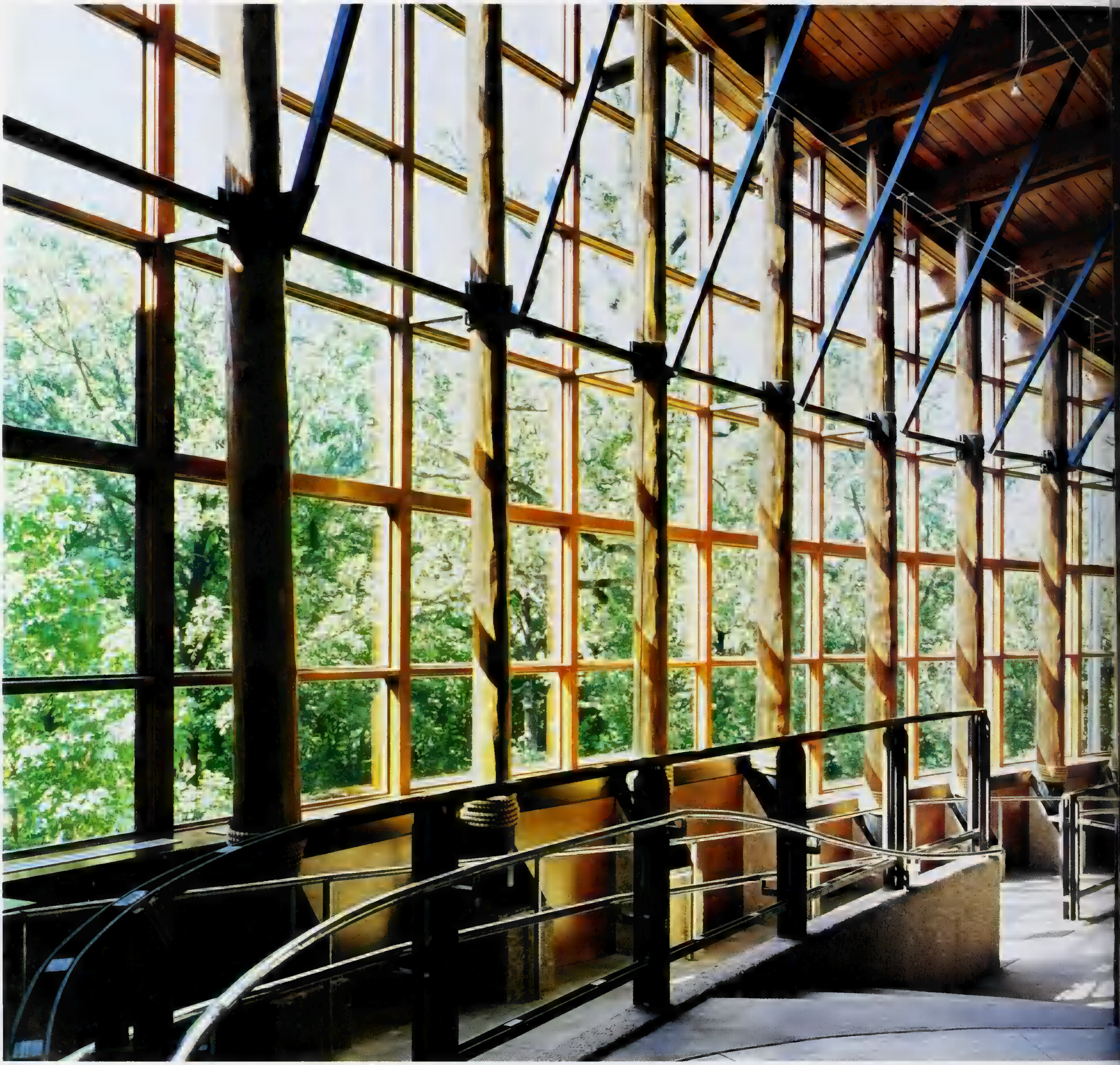

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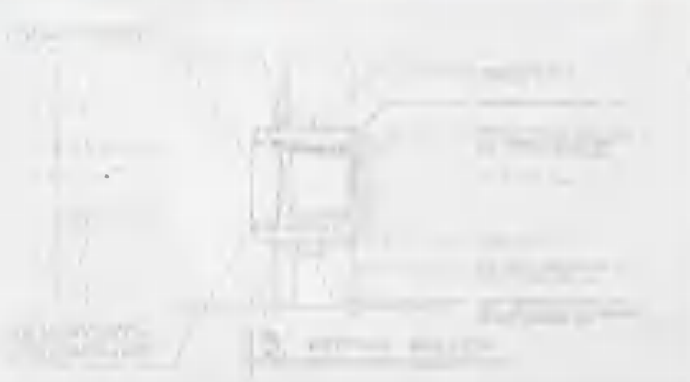

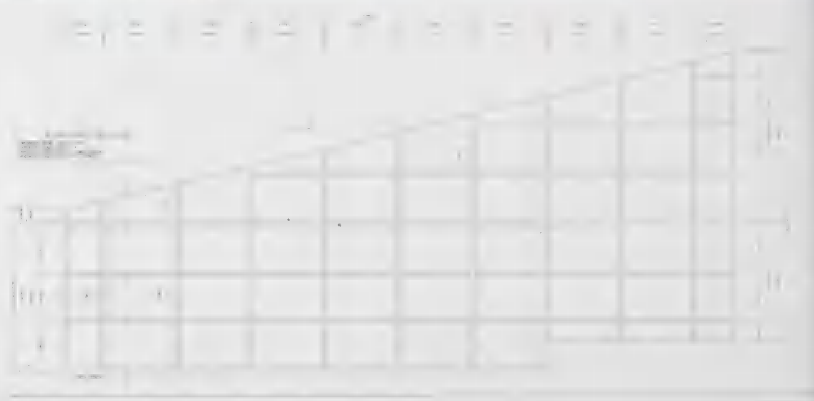

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Dates & Events

New & Upcoming Exhibitions

Albert Kahn: Inspiration for the Modern
Ann Arbor, Mich.
June 2–October 21
Explores how Kahn's industrial architecture inspired the development of international Modernism. Includes works of art and architecture by many of Kahn's contemporaries, such as Diego Rivera and Le Corbusier. At the University of Michigan Museum of Art. Contact 734/764-0395 or see www.umich.edu/~umma.

Equilibrium: The Architecture of Nicolas Grimshaw & Partners
Zurich
June 7–July 21
The firm's work is presented in a series of aluminum flight cases that display mock-ups, fabrics, models, and drawings. Coincides with the publication of *Equilibrium,* the latest monograph on the firm. At the Architektur Forum Zurich. Contact 41 1252 92 95 or ngp@ngrimshaw.ch.

The Idea of Louis Sullivan
Chicago
June 9–September 23
Exhibits the photographs of John Szarkowski, former curator of photography at the Museum of Modern Art and publisher of a book entitled *The Idea of Louis Sullivan.* The exhibition marks the occasion of the republishing of the original 1956 book. At the Art Institute of Chicago. Contact 312/443-3600.

Out of the Ordinary: The Architecture and Design of Venturi, Scott Brown and Associates
Philadelphia
June 10–August 5
Exhibits 250 works from one of the most influential firms of the last half-century. Presents drawings, models, furniture, and reconstructions of elements of their buildings, many of which are exhibited publicly for the first time. At the Philadelphia Museum of Art. Contact 215/684-7860 or see www.philamuseum.org.

Mies in Berlin
New York City
June 21–September 11
Exhibits work from the early career (1905–1938) of architect Ludwig Mies van der Rohe. Though Mies is known mostly for his American Modernist glass skyscrapers, this exhibition will focus on early influences. At the Museum of Modern Art. Contact 212/708-9400 or see www.moma.org. Exhibition complements **Mies in America**

Mies in America
New York City
June 21–September 23
Exhibits work from the late career of the German architect Ludwig Mies van der Rohe, after he arrived in America in 1938. The Seagram Building in New York and the Farnsworth House in Illinois are the show highlights. At the Whitney Museum of Art. Contact 212/570-3600 or see www.whitney.org.

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Dates & Events

Exhibition complements **Mies in Berlin** (see preceding entry).

Art of the Architect
Atlanta
June 23–September 2
Features creative paintings and drawings of contemporary Italian architects, including the late Aldo Rossi, Massimo Scolari, Arduino Cantafora, and Franco Purini. At the High Museum of Art. Contact 404/733-4437 or see www.artofarchitect.com.

Detonation Deutschland
Vienna
June 28–September 3
A film sequence showing the detonation of German buildings from 1945 to the present, exploring the fate of the act of building. This event will be the first exhibition at Alte Halle, on the occasion of the official opening of the new Vienna Museums Quartier. For more information contact office@azw.at via e-mail, or see www.azw.at.

Glass of the Avant-Garde: From the Vienna Secession to Bauhaus
New York City
August 21–January 6, 2002
An exhibition of the collection of 19th and early 20th century Eastern European glass from the Museo Nacional de Artes Decorativas in Madrid. At the Cooper Hewitt, National Design Museum. Contact 212/849-8400 or see www.si.edu/ndm.

What's Shakin': New Architecture in L.A.
Los Angeles
September 16–January 2, 2002
An exhibition featuring new L.A. architecture currently under construction. Projects include the Disney Concert Hall by Frank Gehry, the Cathedral of Our Lady of Angels by Rafael Moneo, the new Prada store by Rem Koolhaas, and others. At the MOCA galleries at the Pacific Design Center and the Geffen Contemporary. Contact 213/621-2766 or see www.MOCA-LA.org.

Ongoing Exhibitions

Hiro Yamagata: Object, Light, and Laser Installation
New York City
Through July 28
Holographic panels and thousands of spinning, mirrored cubes transform the gallery into a wondrous space refracted with spectra of color. At the Ace Gallery. Contact 212/255-5599 or acegallery@aol.com.

Light Screens: The Leaded Glass of Frank Lloyd Wright
New York City
Through September 2
Exhibits 50 leaded-glass windows of Frank Lloyd Wright. Many of these masterpieces in light and color come from private collections and have never been exhibited publicly. At the American Craft Museum. Contact 212/956-3535 or see www.americancraftmuseum.org.

The Architecture of Fumihiko Maki: Modernity and the Construction of Scenery
London
Through July 22
Exhibits the work of internationally acclaimed Japanese architect Fumihiko Maki. At the Victoria and Albert Museum. Contact 44 207 942 2558 or s.cole@vam.ac.uk.

Frank Gehry, Architect
New York City
Through August 26

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McSweeny said, "Quality was the primary consideration for the original shoe factory which featured the first use of steel-reinforced concrete. For Flushometers today, quality is still the key. That's why we chose Sloan's Flushometers with Royal Dual Filtered By-Pass technology. It reflects proven quality innovation and foresight that lasts a lifetime."

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Exhibits work from the 40-year career of the architect and his firm, Frank O. Gehry & Associates. This major retrospective includes national and international projects. At the Solomon R. Guggenheim Museum. Contact 212/423-3500 or see www.guggenheim.org.

Federal Design Now! GSA 2000 Design Awards
Washington, D.C.
Through July 8
Exhibits contemporary architecture and works of art that were commissioned by the U.S. federal government and that won GSA 2000 Design Awards. At the National Building Museum. Contact 202/272-2448 or go to www.nbm.org.

Luis Barragán: The Quiet Revolution
London
Through July 8
Exhibits the work of the Mexican Modernist, including houses and gardens. At the Design Museum, South Bank by Tower Bridge. See www.designmuseum.org.

On the Job: Design and the American Office
Washington, D.C.
Through August 19
Explores the role of the office as a microcosm of American social transformations and a yardstick of cultural progress. Investigates issues of the private and public realms within the space of the office. At the National Building Museum. Contact 202/272-2448 or see www.nbm.org.

Events

Family Program: Egg Drop Design Competition
Washington, D.C.
June 23
Using only paper and a rubber band, participants will create a container to protect an egg when dropped from the museum's second floor. For ages 8 and up. At the National Building Museum. Contact 202/272-2448 x3109 or see www.nbm.org.

From the Ground Up: Two Centuries of Architecture and Development
New York City
July and August– various dates
A series of walking tours around the city which explore major landmarks and neighborhoods like the Brooklyn Bridge, Brooklyn Heights, Grand Central Terminal, the Chrysler Building, and the Seagram Building. Presented by Big Onion Walking Tours in conjunction with the Whitney Museum of American Art and the Museum of the City of New York. Contact 212/534-1672 x257 or see www.mcny.org..

Lectures

Building for the 21st Century AIA's Top Ten Green Buildings
Washington, D.C.
June 6
Muscoe Martin, will present the AIA's selection of this year's top 10 environmentally sensitive buildings. At the National Building Museum. Contact 202/272-2448 x3109 or kdangoia@nbm.org.

Spotlight On Design Lecture Series
Washington, D.C.
June 21 and 25
Carol Ross Barney, the Chicago-based architect (June 21) and Steven Holl (June 25) will speak about their latest work. At the National Building Museum. Contact 202/272-2448 x3109 or

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Dates & Events

kdangoia@nbm.org.

Conferences & Conventions

The More Things Change
51st International Design Conference
Aspen, Colo.
June 6–9
Examines the world of design from multiple perspectives. Designers, scientists, cartoonists, business professionals, and environmentalists will attend. Contact 970/925-2257 or info@idca.org.

Ninth Congress for the New Urbanism
New York City
June 7–10
Politics, policy, and design concerns from region to neighborhood will be discussed. Speakers include Elizabeth Plater-Zyberk, Andres Duany, Joseph Rose. Contact 800/788-7077 or see www.cnu.org.

Ecospheres: An International Conference and Forum
Lincoln, Nebraska
June 10–13
Explores the connections and relationships between the issues of land, water, culture, technology and the environment. At the Embassy Suites Hotel. Contact 402/472-2175 or see www.unl.edu/ecospheres.

A/E/C Systems 2001 Conference
Chicago
June 18–21
More than 15,000 design and construction professionals will participate in conference sessions and attend a large exhibit to find solutions to complex challenges. At McCormick Place, Lakeside Center. Contact 800/451-1196 or see www.aecsystems.com.

145th Annual CSI Convention and Exhibit
Dallas
June 21–24
Sponsored by the Construction Specifications Institute. At the Dallas Convention Center. For more information, contact 800/689-2900 x4772 or llowe@csinet.org.

Making Cities Livable
San Francisco
Deadline: June 30
Issuing a call for papers and an invitation to exhibit at a conference that will be held October 22–26. The broad range of subjects includes sustainability and urban renewal. Contact 831/626-9080 or see www.livablecities.org.

MESH International Landscape Architecture Conference (EDGE VI)
Melbourne, Australia
July 9–11
MESH is the sixth in a series of student-run conferences. Speakers from all over the world will address landscape infrastructure in the city of the 21st century. At RMIT University. Contact +61 3 9925 3806 or mesh@rmit.edu.au.

National Marketing Conference of the Society for Marketing Professional Services
Orlando, Florida
August 8–11
This annual event draws 750 CEO's, marketers, and business developers from architectural, engineering, planning interior design, construction, real estate and specialty consulting firms. Promises three days of educational sessions and events. Contact 800/292-7677 ext. 14 or melanie@smps.org.

Restoration & Renovation
New Orleans, Louisiana
September 7–8
The only trade show and conference for the rehabilitation of building interiors, exteriors, landscapes, streetscapes and historically inspired construction. Contact 800/982-6247 or see www.restorationandrenovation.com.

International Exhibition of Marbles, Stone and Technology
Verona, Italy
September 27–30
Over 1300 exhibitors from 40 countries display the best of their products. The latest in marble technology is also featured. At the Verona Exhibition Centre. Contact +39 0458 298 111 or see www.marmomacc.com.

Competitions

The Phoenix Awards
Deadline: June 15
Recognizes outstanding brownfield projects from across the United States. The winners will be one of the highlights of the National Brownfields Conference in September. Contact 717/772-2724

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- Winning design will be announced at the RCI National Meeting in 2002.

Submittal Requirements

- One completed entry form submitted to Sarnafil by 12/31/2001.
- One model of the building and roof.
- Three sets of architectural plans.
- Pictures of building and roof in progress.
- Aerial photograph of finished building and roof.

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or see www.phoenixawards.org.

MTA Arts for Transit "Sculptural Seating" for Pleasantville Station
Deadline: June 29
The Metropolitan Transportation Authority of New York is currently accepting proposals for the design of sculptural seating for the Pleasantville station. Contact mchen@mtahq.org or fax 212/878-7492.

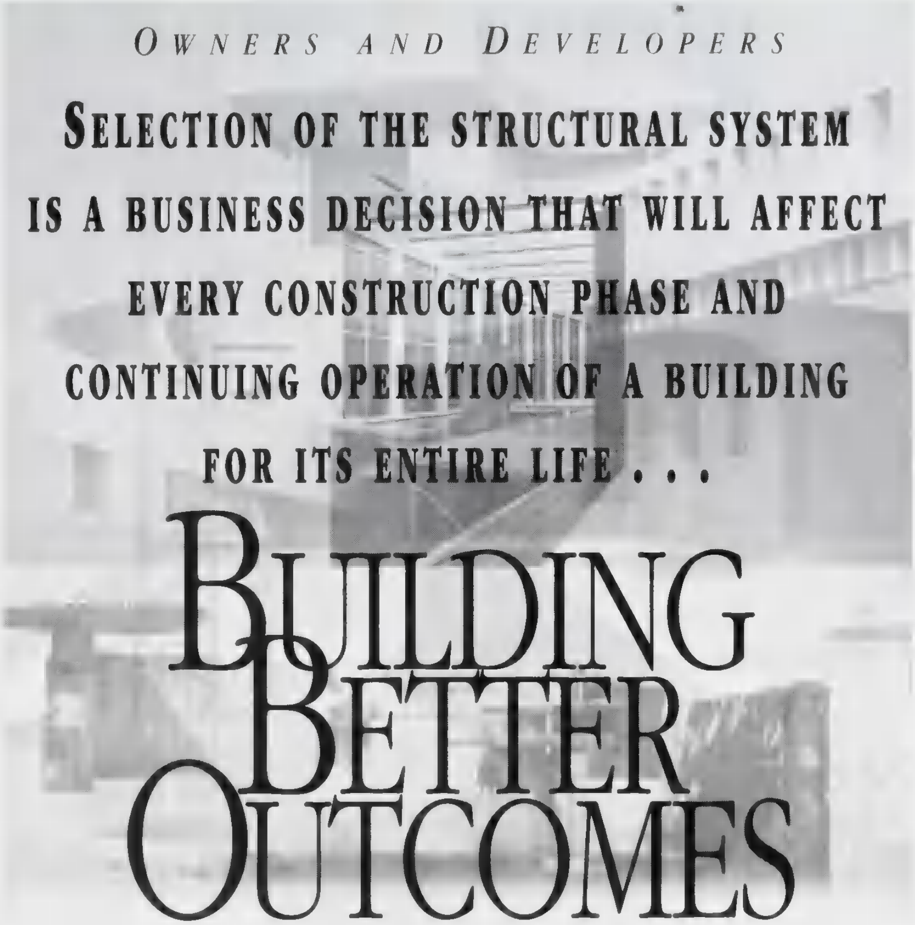
10th Ermanno Piano Scholarship
Deadline: June 30
To be eligible, candidates must have graduated from an architecture program in 2000 or 2001. The winner will be granted $10,000 to work at the office of Renzo Piano Building Workshop in Genoa, Italy. See www.rpwf.org.

New American Design: Furniture
Deadline: July 1
First annual competition will award $1,000 to the best furniture designs that respond to current issues of the interaction of space and human dynamics. Contact 323/661-4952 or see www.builtinc.com.

Construction Specifications Institute Specifications Competition
Deadlines begin August 3
Awards are available for project manuals, short-form specifications, outline specifications, preliminary project descriptions and product binders. Contact 800/689-2900 or see www.csinet.org.

Can Struction
Entry Deadline: October 15
Teams led by architects and engineers build giant sculptures made entirely of cans of food. Works are judged at the AIA convention each year. After a week-long exhibition, all cans are donated to soup kitchens, shelters, and the elderly. "Build out" event takes place in over 50 cities in America. Contact 212/792.4666 or see www.canstruction.org.

E-mail your submissions for Dates and Events to ingrid_whitehead@mcgraw-hill.com two months prior to the event or competition.



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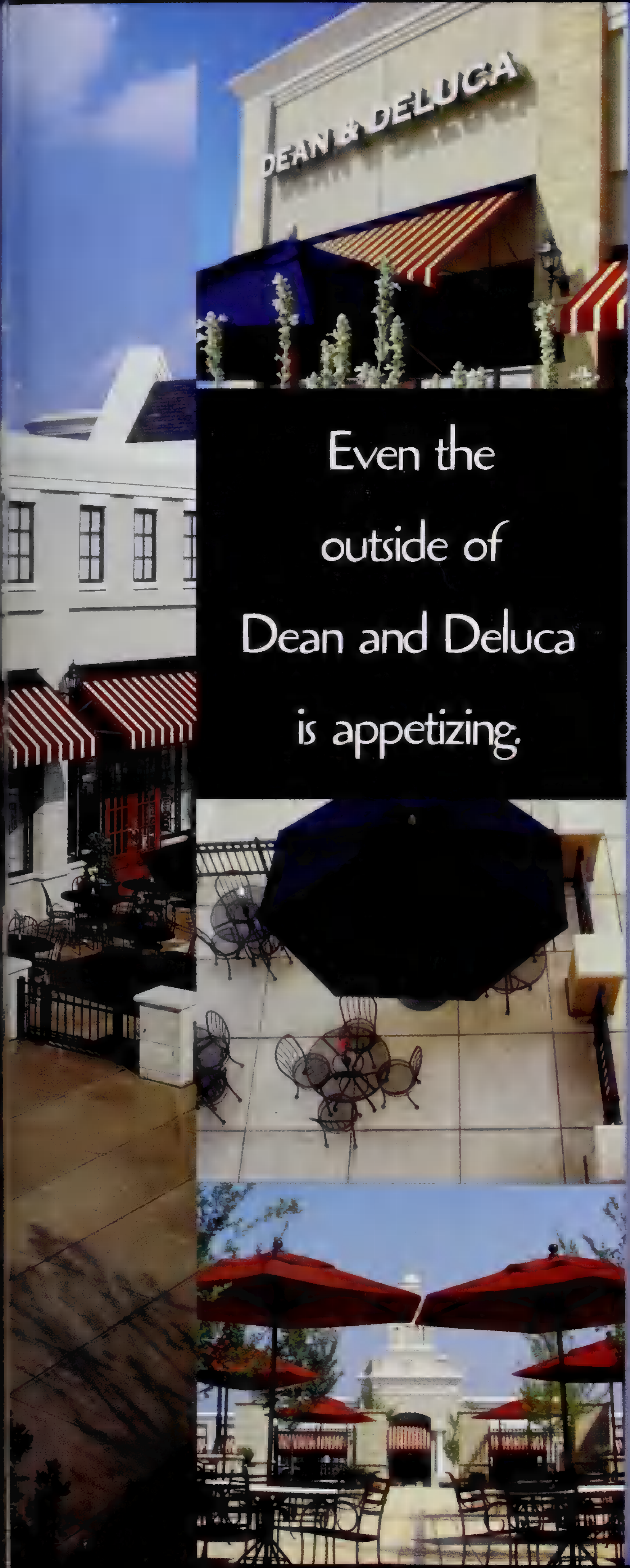

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CIRCLE 38 ON INQUIRY CARD

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When the Chicago Police needed new headquarters, they put Team IMI in the line-up.

Every construction project requires teamwork. Not only among the architects, developers and trades, but especially between the contractors, craftworkers and consultants. Team IMI is the union of these three partners. Our goal is to ensure that you always have enough of the world-class union craftworkers and contractors you need to complete your project—no matter how big, how elaborate or how visionary it may be. Our promise is that we do every job with a sense of pride and accomplishment unmatched in the masonry industry.

Team IMI's involvement with the Chicago Police Department's new 1st District Police Headquarters began when Team IMI convinced city officials of the value and benefits of masonry. The concept was to design and create a prototype masonry building of 45,000 square feet, adaptable to 130,000 square feet, to accommodate the various buildings planned for the future. To date, 11 new police stations are being built on this model. At the design phase, architects from VOA and OWP&P attended Team IMI seminars on masonry design and detailing. During construction, when a problem arose regarding limestone cleaning, Team IMI was quick to provide the technical information needed. Team IMI's staff of architects, engineers and construction consultants was also able to provide a comprehensive package of masonry-related technical services. In the end, the Public Building Commission was very pleased with the work, and the Chicago Police Department stated that the building surpassed all expectations.

Of course, the Chicago Police Department's 1st District Headquarters prototype building is just one example of how Team IMI is making a real impact in the masonry construction industry. Thanks to comprehensive training programs at IMI's National Training Center and around the country at satellite centers, Team IMI is helping to meet the need for skilled union craftworkers and contractors nationwide. Team IMI mobile training units also make it possible to offer specialized training on your job site. And our technical expertise in codes, specifications and design troubleshooting delivers the final piece of the puzzle. In short, with Team IMI, you're assured that the world's best union masonry craftworkers and contractors will always be available for your project, ensuring quality and imagination every step of the way. **To find out more, call 1-800-IMI-0988 or visit www.imiweb.org.**

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archrecord2

FOR THE EMERGING ARCHITECT

This month's archrecord2 celebrates the coming summer by heading out west to the desert, where O'Donnell + Escalante heat up the scene with designs that respond to Modernism without aping it. Meanwhile, back east, the Architectural League of New York has announced the winners of its annual Young Architects competition. And don't forget to visit archrecord2 online, where the four sections, Design, Work, Live, and Talk, receive regular updates and provide more in-depth coverage.

Survival Shelter, California, 1995

O'Donnell + Escalante Architects. The firm's first project is portable and can be rebuilt in two hours.

DESIGN

Inventing architecture for the desert

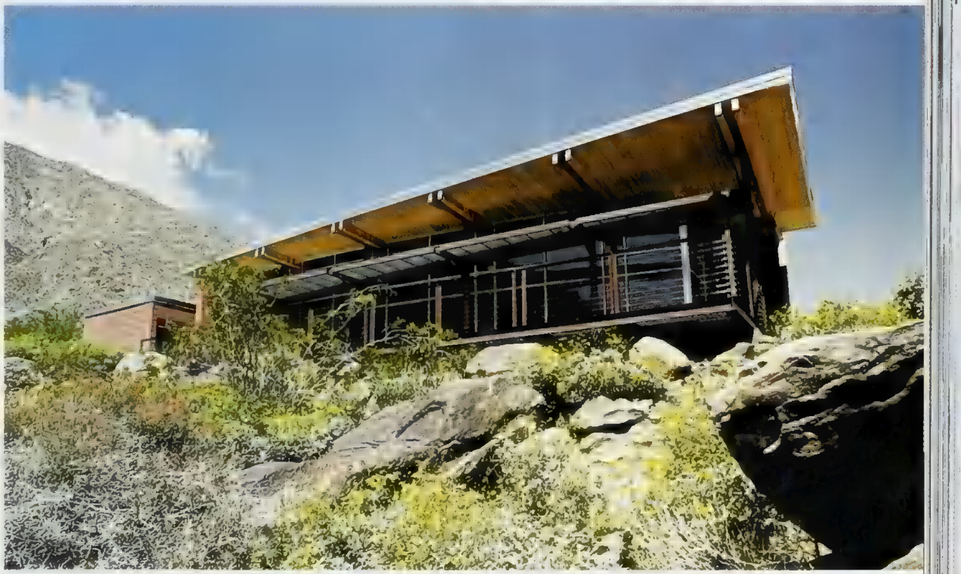
Even for a Palm Springs native like Lance O'Donnell, AIA, setting up an architectural practice in that desert oasis creates certain expectations for a design aesthetic. However, O'Donnell and his partner, Ana Maria Escalante-Lentz, AIA, have absorbed the Modernism of Palm Springs big shots such as Albert Frey without succumbing to it.

In large part, the pair's freedom in design thinking comes from the close working relationship with their Native American clients. "Native Americans are extremely sensitive to the environment," says Escalante, a native of El Salvador. "They have no architectural heritage to speak of. They've been here for a long time, but in a way, they're newcomers, like I am, with a really fresh potential to explore architecture." O'Donnell and Escalante have designed two major projects for the Native Americans: a visitor center for a canyon and a community center. The programmatic mandate for the latter design was simple: "Don't put us in a box."

The path to such creative freedom was not an easy one, however. The pair actively solicited clients and supported themselves with jobs outside the firm itself. "It has been a long journey," says Escalante. "We were sustained by teaching for a long time. We chased after every single available client in the area. We did projects for relatives and friends, until finally, things began to pan out."

But their passion for design has pulled them through since their first collaborative effort, a survival shelter that the two designed and built with the help of some students. "We were both so motivated and so energized once our ideas came together that nothing could stop us. We learned how to weld and worked at our peril with grinders and sanders and things over our heads and sparks flying," says O'Donnell. "And," adds his partner, "we were putting a lot of people in danger." *Kevin Lerner*

Go to architecturalrecord.com/archrecord2 for more in-depth coverage of O'Donnell + Escalante, including more projects.



Tahquitz Canyon Interpretive Center, Palm Springs, Calif., 2000

O'Donnell + Escalante Architects. The simple structure tries not to compete with its striking site.

Agua Caliente Band of Cahuilla Indians' Community Center, Palm Springs, Calif., 2000

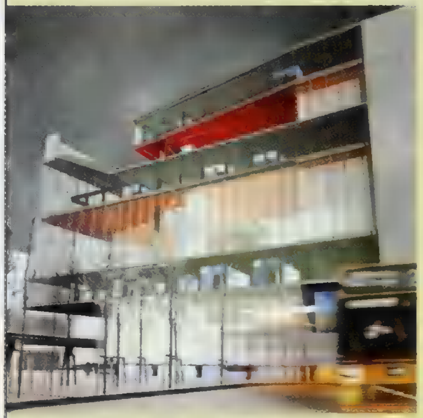
O'Donnell + Escalante Architects. The tribe commissioned a building that would not put it "in a box."

PHOTOGRAPHY: © ROBERT MARKOVICH PHOTOGRAPHY, HEADSHOTS COURTESY OF ROSY CHAPA

WORK

In a league of their own

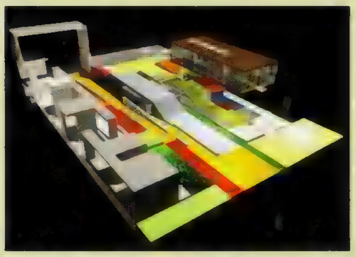
The Architectural League of New York has named six winners in its 20th annual Young Architects Forum competition, themed “City Limits.” Open to anyone who graduated from architecture school less than 10 years ago, the competition often recognizes future leaders in the profession. Entrants submit a portfolio of their work for consideration. The winners for 2001 are SERVO, Teddy Cruz of San Diego, and Thaddeus Briner, Petra Kempf, nArchitects, and Eric Worcester of New York City. An exhibition of the winners’ work will be on display at the Urban Center in New York through June 27.


nArchitect’s Hotel Pro Forma

Born in Guatemala, Cruz is principal of estudio teddy cruz and founded the LA/LA Latin America/ Los Angeles Workshop at the Southern California Institute of Architecture. His project *Living Rooms at the Border* includes a church renovation, affordable housing, and a public garden for San Ysidro.

Briner, a project architect with Rogers Marvel Architects in New York City, submitted a portfolio that includes New York competition entries for the Pier 54 Sun Shade and the TKTS booth. His work attempts to “refract the transparency of system.”

A former urban designer with the Department of City Planning in New York, Kempf teaches urban design at both Pratt Institute and the State University of New York in Buffalo. Her portfolio includes a series of abstract diagrams of urban movement, transportation, and form on translucent vellum.


Cruz’s Living Rooms at the Border

Eric Bunge and Mimi Hoag are the partners in nArchitects; they won the first round and were finalists in the second round of a competition (with Field OFFICE) for the Hotel Pro Forma in Copenhagen. nArchitects is working on a speculative project, de-Central Park, which will be a hybrid of urban park and transportation/delivery networks.

SERVO was founded by four Columbia University Graduate School of Architecture alum now in four different cities: Chris Perry of New York, David Erdman of Los Angeles, Marcelyn Gow of Zurich, and Ulrika Karlsson of Stockholm. SERVO’s work principally deals with “issues of interactivity and collaboration registered at both cultural and organizatinal scales.”

Worcester’s Budapest sketches (top) and Sarajevo University campus project

Founder of the New York firm Manifold, Eric Worcester has a portfolio that includes a series of sketches and studies from Budapest and a design for the campus of Sarajevo University.

Jurors were Yolande Daniels, Jeremy Edminston, James Slade, Frank Lupo, Wolf Prix, Nanako Umemoto, and Mark Wigley. *John E. Czarnecki, Assoc. AIA*

LIVE

Architects after hours

LIVE is the section of archrecord2 that gives you a glimpse into what architects do when they’re not busy being architects. Whether it be furniture design or international travel, you’ll find young architects doing, seeing, being, and creating—all in the LIVE section. This month, you can see the recently posted sketchbook of Steven Whitney, AIA, a young architect who got the opportunity to travel to Kyoto, Japan, and sketch its temples and teahouses while studying the Japanese use of space. Flip through his spiral-bound sketchbook to discover his detailed crosshatched sketches and read his commentary on interior space and the importance of the garden in Japanese design.

Go to architecturalrecord.com/archrecord2 for constantly updated, exclusive interactive material and the archives of archrecord2.

TALK

Advice and dissent

This month, in the TALK section of archrecord2, two new forums were introduced, with questions coming from the readers instead of the editors. Are you collapsing under the weight of the ARE? You’re not alone anymore with our advice forum for those preparing for the exam. Plus, we’ve started a general interest and advice forum where you can ask questions of your peers and provide your own peerless answers to others’ questions.

Go to architecturalrecord.com/archrecord2 to join the discussion and to see what other young architects are saying.

PHOTOGRAPHY: (FROM LEFT) COURTESY NARCHITECTS, ESTUDIO TEDDY CRUZ, MANIFOLD/ERIC WORCESTER

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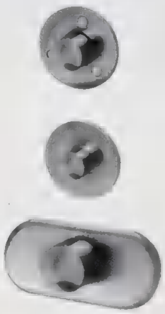

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CIRCLE 41 ON INQUIRY CARD

A master of imagery and collaboration, Bruce Mau discusses his role in design culture

Interview

By John E. Czarnecki, Assoc. AIA

Bruce Mau relishes problems. He may be best known for his graphic design of books and other publications, but don't call Mau a graphic designer. Viewing design in far broader terms, Mau has collaborated with architects, filmmakers, and performance artists, and has designed videos, exhibitions, and graphic identities for buildings and companies. Since 1985 he has had a studio in Toronto, Bruce Mau Design, and has been design director of Zone Books. He was creative director of I.D. *magazine from 1991 to 1993. With Rem Koolhaas, Mau designed* S,M,L,XL *and is currently working on the Seattle Public Library and an urban park in Toronto. With Frank O. Gehry, Mau developed the environmental graphics for the Walt Disney Concert Hall, now under construction in Los Angeles. For the UCLA Hammer Museum [page 42], Mau is creating an identity for a building by architect Michael Maltzan. A book of Mau's own work,* Life Style *[DECEMBER 2000, page 61], was recently published. Mau spoke with RECORD about* Life Style*, collaborations, and the New York Times building that could have been.*

ARCHITECTURAL RECORD: *After producing books and publications for other people, what did you have in mind for your own book,* Life Style?

BRUCE MAU: I wanted to respond to the general design culture evolving around us. In my studio, we see our work evolving in response to that context, and we realize that in order to produce work in that context, we need to get a handle on what exactly the context is.

Our audience is people who work in the realm of the image. That is a pretty broad spectrum these days because it includes people who work not only in acknowledged realms, like design or architecture or publishing, but also in business.

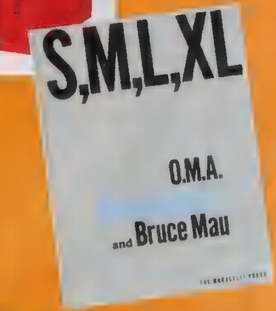
AR: *With the imagery and text, there are multiple layers of information in* Life Style.

BM: Yes, there's a kind of dance that happens between the two. In publishing, obviously, there's a certain kind of precision needed in the text that's quite different from what's required for the image.

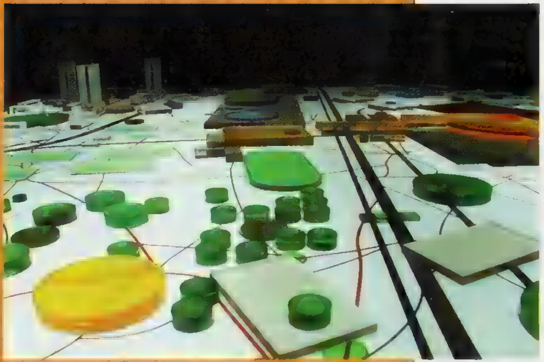
AR: *What lessons from the production of* S,M,L,XL, *which was more than 1,400 pages, informed your work in* Life Style, *which was more than 600 pages?*

BM: There were a lot of lessons. One is that as you scale an object up in terms of its sheer volume, it's not a linear progression in terms of its complexity. It actually gets very complex very quickly in a certain way because, at a certain number of pages, a change is not just a change—it's something that has to ripple through everything.

With *Life Style*, it's actually taken to another level. It's really conceived as a kind of multitrack recording, where there are three different tracks of material in a composition conceived from the outside as a shape itself. [The three tracks] in *Life Style* are life theories,



Bruce Mau (top) has designed *Life Style* (above, 2000), which documents his practice, and *S,M,L,XL* (right, 1995), which presents the work of Rem Koolhaas. For Indigo bookstores in Toronto (below), Mau developed a visual identity program.



Mau is part of the team that won a competition in 2000 for the design of Downsview Park, a 322-acre park on a former military base in Toronto. The team includes Koolhaas' Office for Metropolitan Architecture; Petra Blaisse, Inside Outside; and Oleson Worland Architects.

life projects, and life stories, and those are each broken out into text and image.

AR: *In general terms, how is the design of publications evolving?*

BM: Today, it's all about the image and using a kind of cinematic cadence, and introducing a whole different book culture. It's a kind of hybridized product because culture, in a way, is subject to Darwinism too. If a magazine were about to be eliminated as a product, it would be because it wasn't very effective. But, on the contrary, it's a very efficient product.

AR: *You also work with architects. What is interesting in your collaborations with architects is that the role of the graphic designer is really changing. Now you're being brought on at the very beginning of projects. How does that affect your role?*

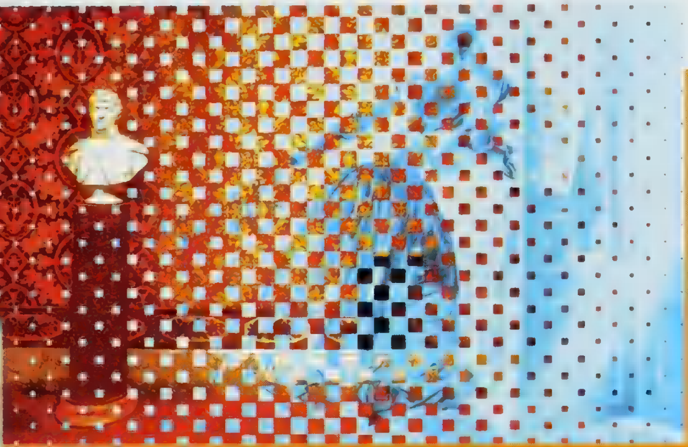
BM: The people we collaborate with are often adventurous in many ways. For instance, when I started working on the Seattle library with Rem, I asked him, "Do you want me to do signage, or do you want me to think about the project?" He said, "I want you to think about the project." [Rem] has systematically worked to break down those boundaries.

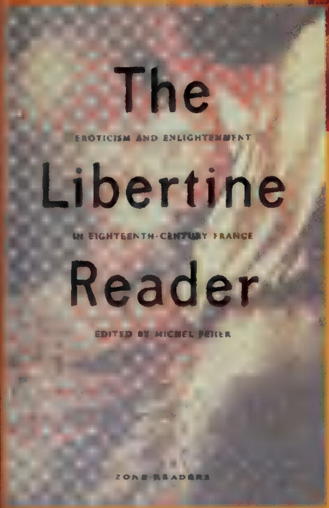
All of the processes of creative production that use the image as a kind of modus operandi are being transformed. They're under pressures in many ways. A lot of the things that are sort of unsatisfactory in the world are those where there hasn't been a synthesis across disciplines. So we need to develop methods that are crossdisciplinary in order to deal with issues like the workplace, and all sorts of things around the way that we work and live. Like the category of graphic designer—I've sort of dropped the word *graphic* from my own title.

AR: *But that is your background and training.*

BM: Yes, that's really how I started. But it's such a limiting qualifier that I've just decided to be a designer and to invest in the word *designer* and disinvest in *graphic*. The reason that we are what we are is that we use communication design technique to explore ideas. Whether they're spatial, organizational, typographic, formal, or business ideas, we use communication technique to think about those problems and communicate them in a new way.

"I'VE JUST DECIDED TO BE A DESIGNER, AND TO INVEST IN THE WORD 'DESIGNER' AND DISINVEST IN 'GRAPHIC.'"





The

EROTICISM AND ENLIGHTENMENT

Libertine

IN EIGHTEENTH-CENTURY FRANCE

Reader

EDITED BY MICHEL FEHER

ZONE READERS

One of the many publications that Mau designed for Zone Books is *The Libertine Reader* (1997), a collection of erotic letters, fiction, and other texts from 18th-century France (left). In a collaboration with André Lepecki and John Oswald, Mau created a video-based installation, *STRESS* (below), shown in Vienna in 2000.

And that allows us, in a way, to invent things that other people are unable to.

AR: *Does this closer collaboration between architect and designer point to the importance of image?*

BM: The realm of the image is more important than ever, but it's a very complex realm. People still make a distinction between a building and an image, and I think that distinction is less and less supportable.

AR: *You've collaborated with architects like Rem and Frank Gehry on certain projects. Are you extremely selective in who you work with?*

BM: Yes. Because we have such an intimate collaboration, we're pretty selective. We make sure that they have a kind of sympathy for the ambitions of our work, and that, frankly, we have sympathy for the ambitions of theirs.

AR: *When you collaborate with Rem, for example, what exactly is your role? I assume that it may be different on each project, but why does he need another designer with him early on?*

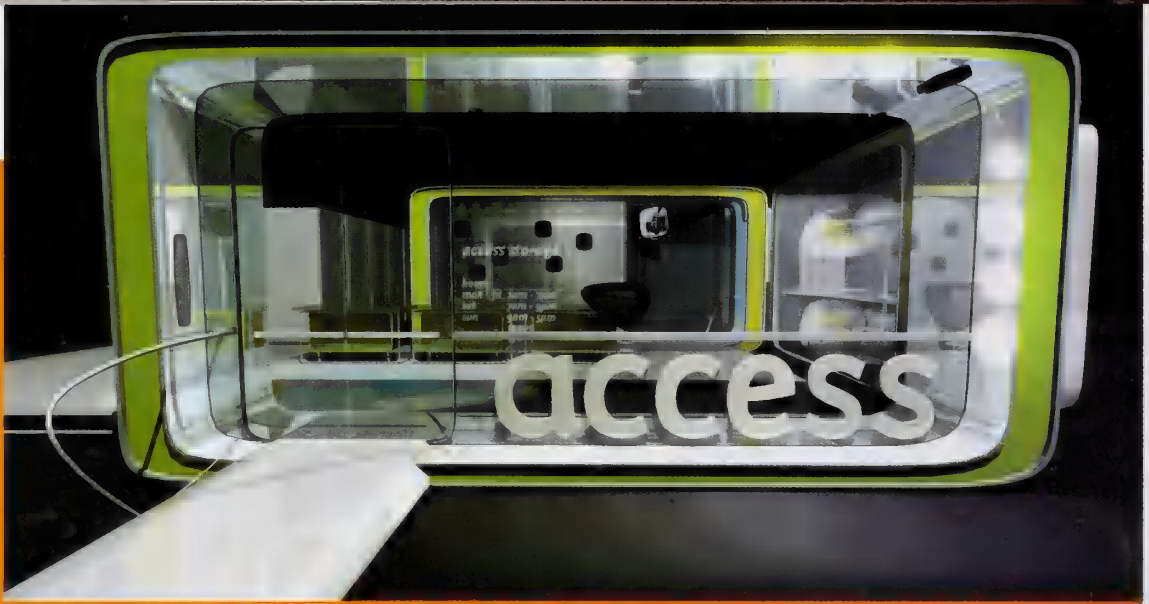
BM: Well, Rem typically has a lot of designers with him on projects, but the methods that we've evolved have to do with rigorous analysis and structure of content—a method that could be applied to almost anything. It's this method that is really critical. The first sort of significant work has to do with conceptualizing the project in the world. Then [with this method] we can produce a park, a book, an institution, a business, or whatever.

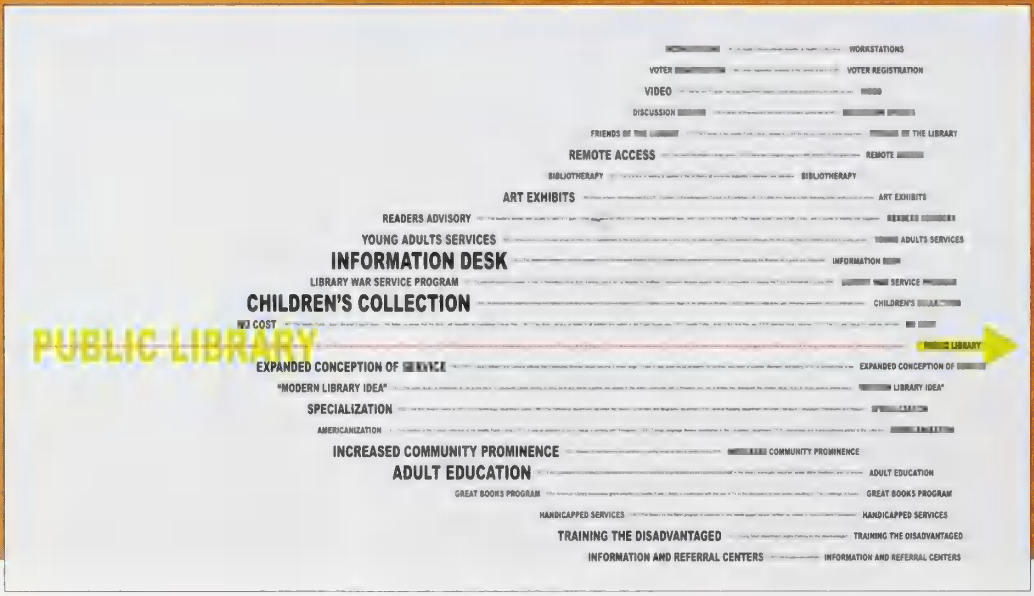
AR: *You've suggested that industrial designers are, in some ways, the model of the future and that architects are going to be following the way industrial designers do things. How so?*

BM: Well, I would suggest that it's going to be a kind of hybridization [of designers], and the sooner we can get to the advantages that that offers, the more fun we're going to have. The way it works now is that an engineer often does structure, an architect does skin, a space planner does interiors, and an industrial designer does product. It's a nasty mess. The quality of life that it produces is also a nasty mess, and we all suffer. The problems are where those things rub up against one another.

AR: *There's lots of talk these days about architects and designers collaborating, but they're not always good at it.*

BM: The reason that I got interested in architecture is that I saw it as a field of synthesis—basically a place where you bring into play all these different things. And I think that's Rem's real genius—his ability to pull talent into play on projects and let things evolve.





This year, with New York architect Lindy Roy [News, MAY 2001, page 50], Mau has developed a brand identity program, marketing, and signage for Access Storage Solutions (above), a British storage company. Working with Koolhaas on the Seattle Public Library, which has yet to begin construction, Mau has designed signage and environmental graphics (left).

PHOTOGRAPHY: (TOP) COURTESY LINDY ROY/ROY INC.

> **"THE CIVIC IS UNDER SIEGE AT THE MOMENT. ANYTHING PUBLIC OUGHT TO BE AGGRESSIVELY PROMOTED."**

AR: *You're working with Koolhaas on the design of the Seattle Public Library. It's a rather public project with a lot of input from a very interested constituency.*

BM: Yes, the library has an incredible process. I've never seen anything quite like it. The public interest is phenomenal—literally 2,600 people in a huge auditorium for a design presentation.

AR: *What residual impact does the public process have?*

BM: The process can have a profound effect on the discourse of the city. People can be introduced to a whole other language and level of thinking that can shape many other things in the city that have nothing to do with the library.

AR: *On a broader urban scale, you are working with a team that includes Koolhaas on the design of Downsview Park, a 322-acre urban park on a former military base in Toronto [News, JULY 2000, page 28]. What's the significance of this project for you?*

BM: It's a civic project, and the civic is under siege at the moment. Anything public ought to be aggressively promoted. So to take our place in a kind of civic discourse and to begin to engage in these things is really important.

AR: *Can you explain the design process for Downsview?*

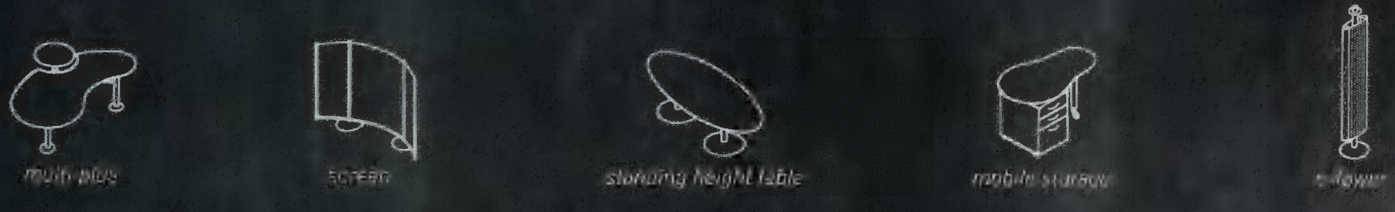
BM: Basically, what we did was map out a series of concepts that we thought would be significant for the work. Those eventually became the kind of formula for the project.

One of the distinctions between this park and any other that I know about is that it's not really a design for a park; it's a formula or an algorithm for producing an environment like this. One of the things that we still have to figure out is how to control it. So we're going to design a process or a method or a recipe—it's quite a different kind of strategy. We designed a vector, basically, and it's a question of how to define the vector.

AR: *You've said that typography and urban planning are one in the same. Can you explain that? How is that informing what you're doing at Downsview?*

BM: Well, they're one in the same in that if you approach it with a method, the problems are more or less the same. Of course, there are different techniques that you have to deploy to be successful. One of

You'll think twice about putting your feet on it. Not to mention your stapler. And your pen...



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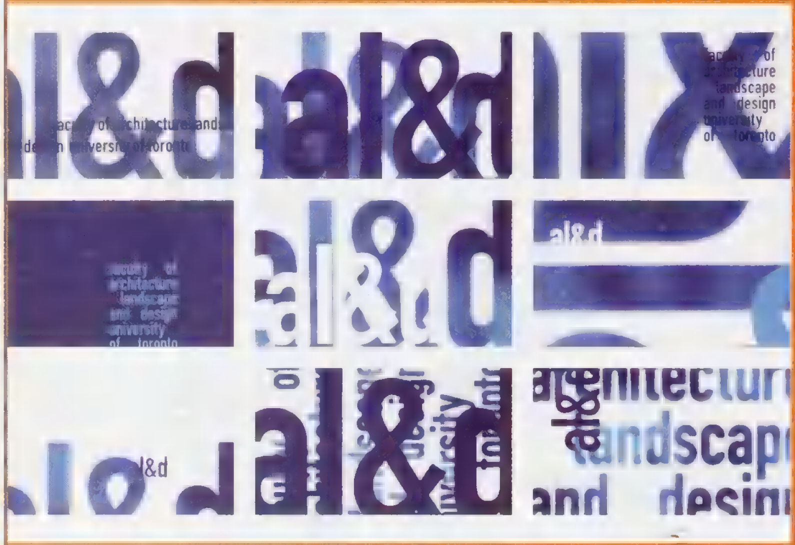
CIRCLE 42 ON INQUIRY CARD

For the identity of the University of Toronto's Faculty of Architecture, Landscape, and Design in 1999, Mau conceptualized variations (line, stack, and mark) of text components.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the arguments about the global image economy is that, as an environment, design is scaleable. So we pour the same kind of design focus into typography as we do into urbanism. In some ways, it's a transposable method. You have a set of different questions or issues or objectives [for typography versus urban design], and you want to achieve certain effects. When you abstract the method, the method is in fact very similar.

Of course, it's different scales of complexity, but in a certain way it's not. You can understand the complexity of the world in letter forms and you can understand the complexity of the world in a park design, too.

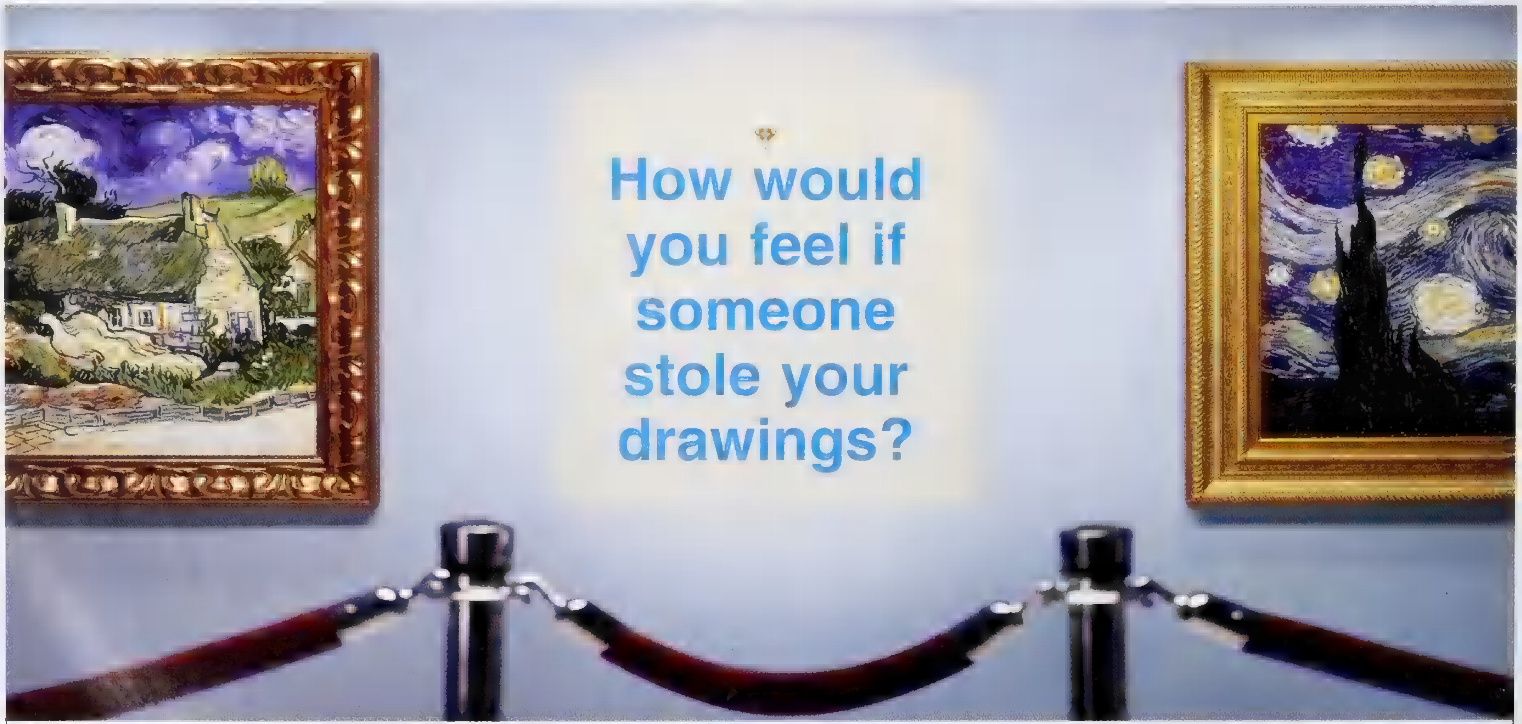
AR: *You were going to work with Frank Gehry on the New York Times headquarters, had he won the competition [News, OCTOBER 2000, page 44]. Can you comment on why Gehry dropped out before Renzo Piano won the commission?*

BM: The New York Times wanted the product without the process, which is really a tragedy. They just wanted to buy the product like you could just get it off the shelf, and it's not a shelf-made product. It's a process. I think it was incredibly brave of [Gehry] to say to the *New York Times*, "I can't deliver. I can't guarantee for myself that I'll deliver the quality that I need if you squeeze the process." And I think he did absolutely the right thing. We had a beautiful scheme, which is such a shame.

AR: *You've designed publications and exhibitions, have collaborated with architects on buildings and a park, and have even designed the uniforms for the Canadian Olympic team. Are you open to any design project?*

BM: I'm pretty open, but I need a certain level of complexity to feel challenged. I need problems. ■

WWW For more of the Mau interview, including his thoughts on branding and globalization, visit www.architecturalrecord.com



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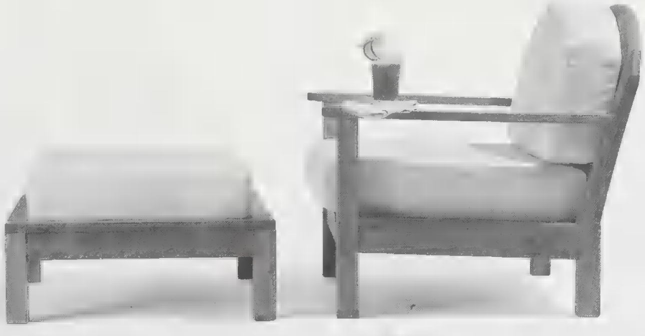
CIRCLE 43 ON INQUIRY CARD



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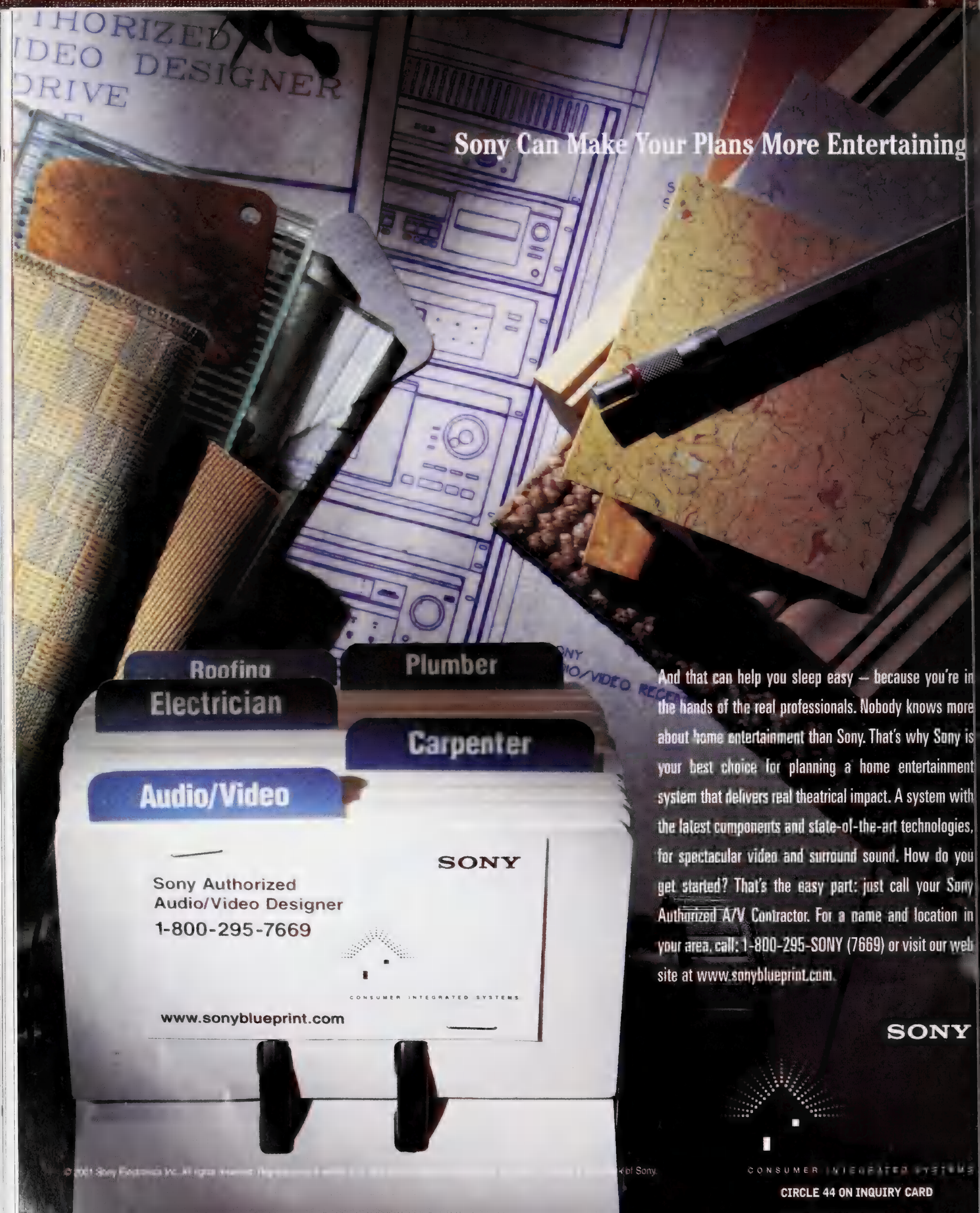

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CIRCLE 44 ON INQUIRY CARD

Low-income housing tax credits increased—for better or worse

Practice Matters

By Charles Linn, AIA

Last December Congress enacted legislation that would increase the per capita value of federal income tax credits given to the Low-Income Housing Tax Credit Program (LIHTC) for the first time since 1986. This is good news for architects and developers—the majority of developer-constructed low-income housing built in the U.S. uses the credits. (Four out of the five projects in RECORD's last multifamily housing Building Types Study [JULY 1997, page 107] used them.)

The value of the tax credits given to each state will rise from $1.25 per state resident to $1.50 this year, and will increase again in 2002 to $1.75. Starting in 2003, the annual increase will be tied to inflation.

How the tax credits work

The program is administered by the Internal Revenue Service under Section 42 of the Internal Revenue Code. Credits are allocated to an agency in each of the 50 states, usually a state housing or finance agency. Each state agency, in turn, divides up the credits: A minimum of 10 percent of them must be reserved for nonprofit developers, and the remaining are granted to for-profit developers to help finance the construction or substantial rehabilitation of existing apartments. Each state has its own criteria for qualifying projects and developers.

To qualify for the 10-year tax credit, the developer must agree that for 15 years a portion of the apartments in the project will be rented to low-income tenants. Either 20 percent of the apartments must be rented to people whose income is 50 percent or less of the area gross median income (AGMI), or 40 percent must be rented to people whose income is 60 percent or less than the AGMI.

The tax credit is calculated by taking the building's depreciable development costs, excluding land (at least $3,000 per unit for renovations, or 10 percent of the building's eligible basis) times the percentage of units that will be designated as low-income units (qualified basis) times the 9 percent tax credit. This 9 percent figure can be subtracted from income tax owed each year over the next 10 years.

Many states offer their own tax credits. New York State, for instance, has an additional $2 million dollar-for-dollar tax credit program, plus four other programs that provide funding through tax-exempt bonds and low-interest loans.

Turning tax credits into gold

But tax credits don't build buildings—developers do, and what most developers need in order to build is cash. Once they receive tax credits, they can sell them to firms specializing in creating tax shelters. Developers can also retain ownership of their projects and keep the tax credits for themselves, but the idea is that developers who sell their credits have additional cash either for construction or for debt reduction on their project, so they can do a better job and still keep the rent low enough to accommodate the required number of low-income tenants.

Companies that buy these kinds of tax credits resell them to institutional investors, who use them to reduce their own federal income taxes. Demand for the tax credits has always outstripped supply, and the availability of additional credits will no doubt be used in the program. For example, New York State's allotment will increase from $22.7 million to $28.4 million this year, and will increase to $33.2 million in 2002. The market price of these credits varies with demand, but recently a dollar's worth of income-tax credit cost about 75 to 80 cents.

The down side

The number of housing units produced annually by the program has diminished over the years, as inflation has taken its toll on the $1.25 per capita tax credit. In addition, the boom in construction activity over the last few years has kept contractors busy, and bid prices on all kinds of construction have been higher, so that each dollar invested into housing construction has bought a bit less. Approximately 800,000 units of low-income rental housing have been created since the LIHTC was initiated in 1986, and over $10 billion in private funds has been invested in them.

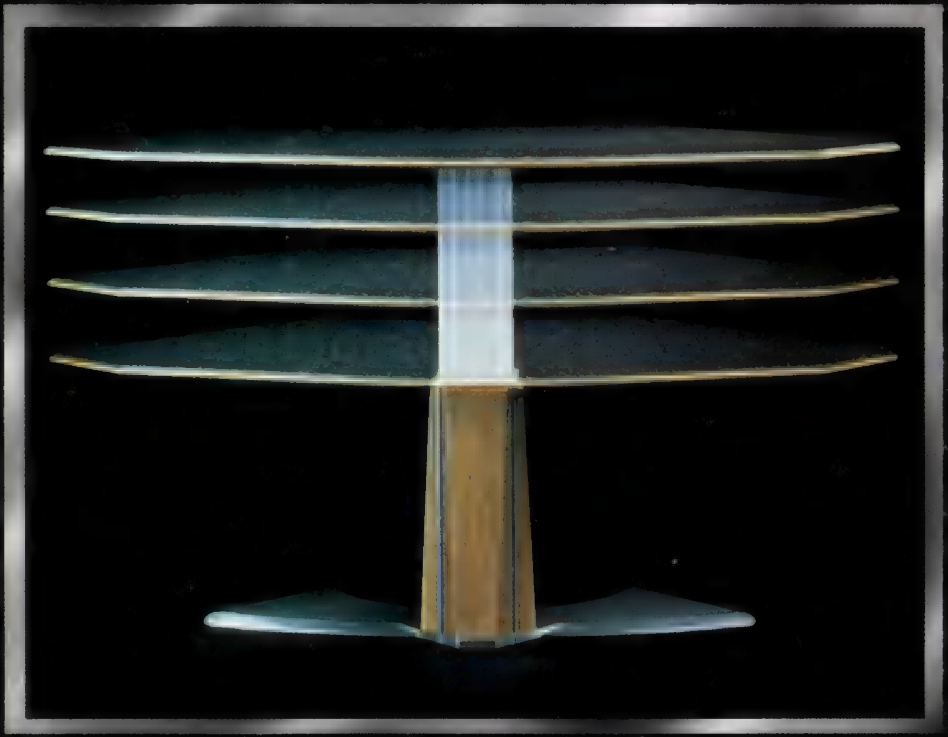
Housing advocates point out that the number of low-income housing units available falls far below the number needed. A 1995 report called "In Search of Shelter: The Growing Shortage of Affordable Rental Housing," by the the National Center on Budget and Policy Priorities, a nonprofit that studies government spending, noted that there were 6.1 million low-cost rental units in the U.S., but 10.5 million renters. Last year's report from the National Low Income Housing Coalition, "Out of Reach 2000," noted that the median fair-market rent for a two-bedroom apartment in the U.S. demands a housing wage of $12.47 per hour, 242 percent of the minimum wage of $5.15 per hour.

Critics also point out that the LIHTC is an extremely awkward way to accomplish what is still in effect a housing subsidy, noting that while the rate of return for investors is good, in the end neither the government nor the tenants have any equity stake in what is built. After 15 years the owner can rent the low-income apartments at the market rate. The LIHTC financing also creates hidden costs: Fees must be paid to the syndicators who put together the tax credit deals; the creation of tax credit partnership agreements generates legal costs; and the syndicator charges annual fees for ongoing services. LIHTC financing also can add months to the development process.

The LIHTC comes off as a bad deal for a good ideal. It is now the only affordable rental housing program that developers can invest in, and it is unlikely that Congress would ever replace it. Both the developers who profit from it and the housing advocates who think more could be accomplished with the money seem to be united behind it. ■

ELEGANCE IN MOTION

GRANITE



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CIRCLE 45 ON INQUIRY CARD

The boldness gap has narrowed, but at what cost?

Critique

By Robert Campbell, FAIA

This month, ARCHITECTURAL RECORD begins a series of Critique essays by two contributing editors, Robert Campbell, FAIA, and Michael Sorkin. This month, Campbell welcomes the boldness in architectural form, while seriously questioning long-term effects. Look for a Critique by Sorkin in our July issue.

Hey, avant-garde architecture is back. We're thrilled. Right?

Just four years ago, I wrote for this magazine an article called "The Boldness Gap: Why America Is Falling Behind Other Countries." We seemed, at the time, to be the most boring nation, architecturally, in the world. Nobody here was taking risks.

Obviously, my article galvanized an entire nation. Clients began hiring certified media stars, preferably flown in from those "other countries." This year, in my normally conservative home of Boston, at least eight Pritzker Prize winners have been gainfully employed: Norman Foster, Renzo Piano, Frank Gehry, Fumihiko Maki, Rafael Moneo, Rem Koolhaas, Hans Hollein, and Kevin Roche. Other well-known architects with prominent projects in the city are Machado and Silvetti and Steven Holl, as well as retro-gardist Robert Stern.

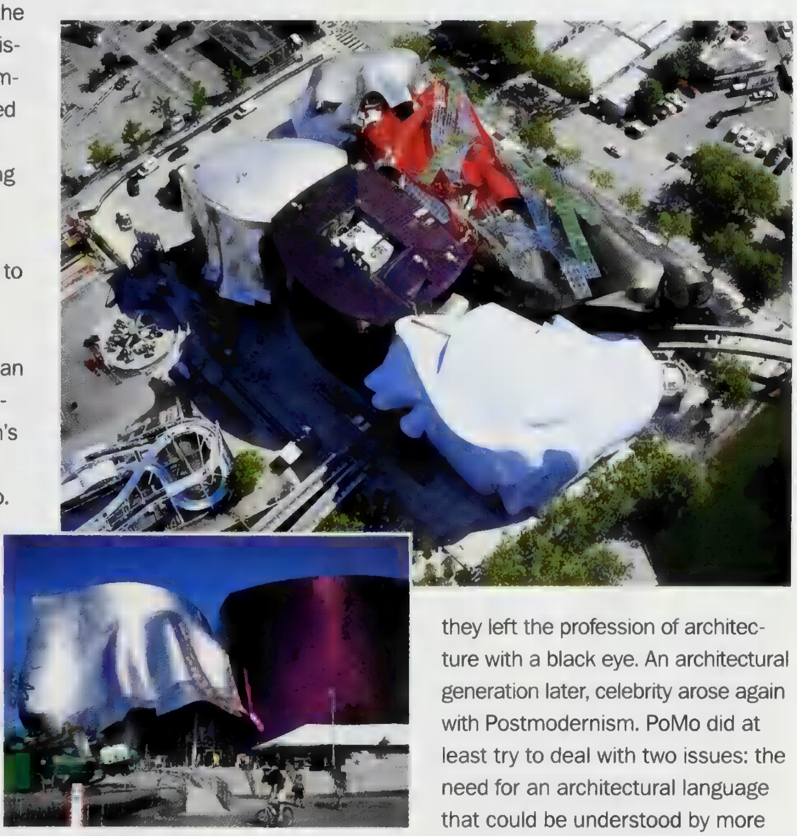
And behind the media stars, of course, come the shape makers. Leaping off the computer screen comes a building that looks like a tragic collision of boxcars, or perhaps like an abandoned game of Pick-Up Sticks. Or we may prefer the work of the biomorph, the blobmeister, creator of a building that resembles an enormous muffin that failed to rise properly in the oven. The magazines and the critics, including this one, lap it all up. No surprise there: everyone seeks novelty.

Alas, it's the nature of critics to worry. I was worried about tame, and now I'm worried about bold. Exciting new form-making ideas can quickly go stale. Will the blobmeisters last longer than Paul Rudolph's corrugated concrete? The critics and the magazines loved that, too. Will train-wreck architecture (or buildings that have been "earthquaked," as my colleague Blair Kamin in Chicago calls them) remain in vogue as long as cut-and-paste PoMo?

Passing parade

I have no problem with the passing parade of architectural fashions. Change for its own sake can be good. It creates a visible timeline. We can walk through the built world, read buildings by their style, and so date them. Style, along with its many other communications, tells us when we are. And there's a legitimate joy in exploring what can be created by a new technology, such as the computer.

So what worries me isn't the form making, even when it seems as childish as a kid with Silly Putty. What worries me is the possibility that other issues are being ignored. There have been previous eras when we applauded celebrity architects. Too often they fell on their faces, and in so doing they diminished the stature of architecture in the public mind. The obvious example is the 1960s, when planners and their architects, with the best of intentions, leveled large portions of our cities and replaced them with Corbusian *villes radieuses,* or with powerful sculptural monuments in the then-cutting-edge poured-in-place concrete. Because such buildings ignored the web of city life so well understood by Jane Jacobs, they left the profession of architecture with a black eye. An architectural generation later, celebrity arose again with Postmodernism. PoMo did at least try to deal with two issues: the need for an architectural language that could be understood by more than the cognoscenti, and the need to pay attention to culture and context. But as is well known, it performed these deeds in a jokey, shallow manner, giving us such monuments as Michael Graves' Portland Building, an AIA Honor Award winner that is a bad place for human beings to work. People



Campbell calls Frank Gehry's Experience Music Project in Seattle a "blobfest."

Robert Campbell, FAIA, is the Pulitzer Prize–winning architecture critic of the Boston Globe *and a longtime contributing editor of* RECORD. *He practices architecture as a consultant to cultural institutions and is the author, with Peter Vanderwarker, of* Cityscapes of Boston: An American City through Time.

PHOTOGRAPHY: © LARA SWIMMER/ESTO

WILL THE BLOBS . . . AND ALL THE OTHER MOTIFS OF THE MOMENT TURN OUT TO BE MORE THAN PASSING CLICHÉS?

began to distrust architects. They wonder why we keep giving ourselves prizes for stuff they hate. Will the blobs and train wrecks and fractals and folds and perforated screens and all the other motifs of the moment turn out to be more than passing clichés? Will these buildings work well for their purposes and their surroundings? Will they communicate meanings the public can understand? Will they be durably built? If not, we architects are going to be the losers.

Looking at the whole

We should look at buildings whole. Even when we love them, even when we think they are great, we should retain a clear eye for their flaws. Bilbao is wonderful, but we should admit to ourselves that the interior gallery spaces do not begin to fulfill the promise of the astonishing exterior. Or to go back to an even more sacred icon: Mies' Seagram Building was recently named, by one respected critic, the greatest building of the millennium. The Seagram is a box of conditioned air, a box of leasable volume. It is a very elegantly detailed box. Perhaps it even possesses symbolic significance: Robert Stern suggests that the bronze color is a subtle reminder of the Seagram company's liquid product. But can a building without an interior be great architecture? A building without a program of civic or cultural significance? Is elegant surface all we demand? We should admire what there is to be admired, but we should not fetishize architecture.

Once again, we architects and journalists are falling for exciting ideas just because they're new, without testing them against our beliefs about good environment. International stars flame into being on the basis of two or three modest and sometimes unworkable buildings. I've visited two jobs by Zaha Hadid, for example, and both of them, regarded from any other point of view than that of pure sculpture, were bad architecture. (They're not very interesting sculpture either.) The Jewish Museum in Berlin, by Daniel Libeskind, another widely hyped building, derives most of its ideas from decades-old expressionist cinema, and it's badly detailed. It's a perverse fun-house that may not prove spacious enough to hold the exhibits it was created for. Frank Gehry, of whom I count myself a major fan, created in the Experience Music Project in Seattle a family of blobs—a blobfest—that, like Hadid's work, can be appreciated only as sculptural form. Philippe Starck renovates the lobbies of old New York hotels in such a way as to make each person look like a spotlighted mannequin, while leaving the bedrooms upstairs as the tiny, poorly heated cells they always were.

We can welcome the daring of these works while remaining skeptical of their long-term significance. Certainly, architecture is an art. But it's a different art from sculpture or cinema or haute couture. Architecture is the art of making places. Places exist for human habitation. They include not only architectural interiors, but streets and squares and gardens. Whatever higher virtues they may have, they'd better work. I don't accept that architecture has become another set of images on the timeless and placeless cyberscreen. Nor that its true audience is an international guild of professional appreciators. Novelty is great, but let's give it the honor of our critical attention. ■

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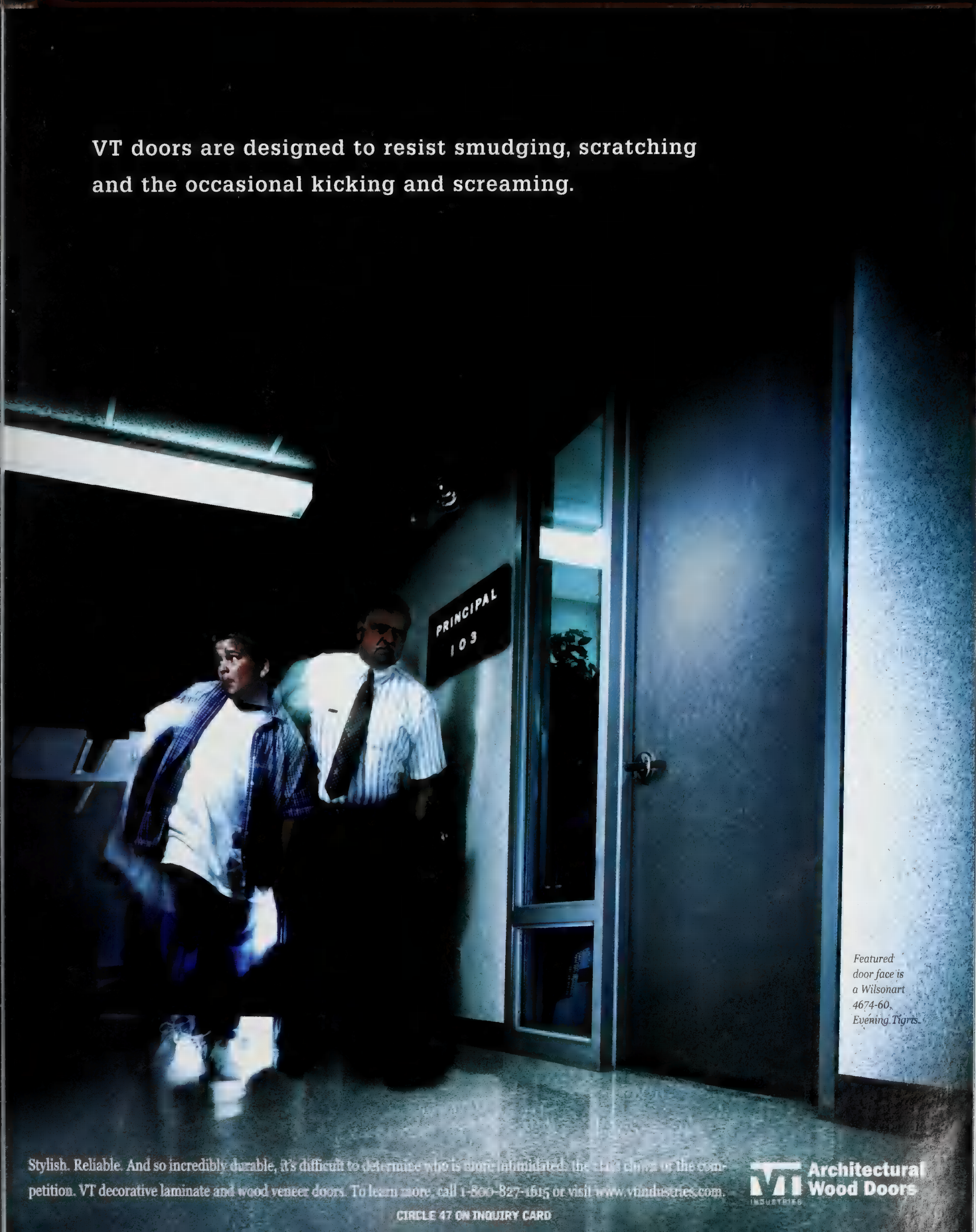
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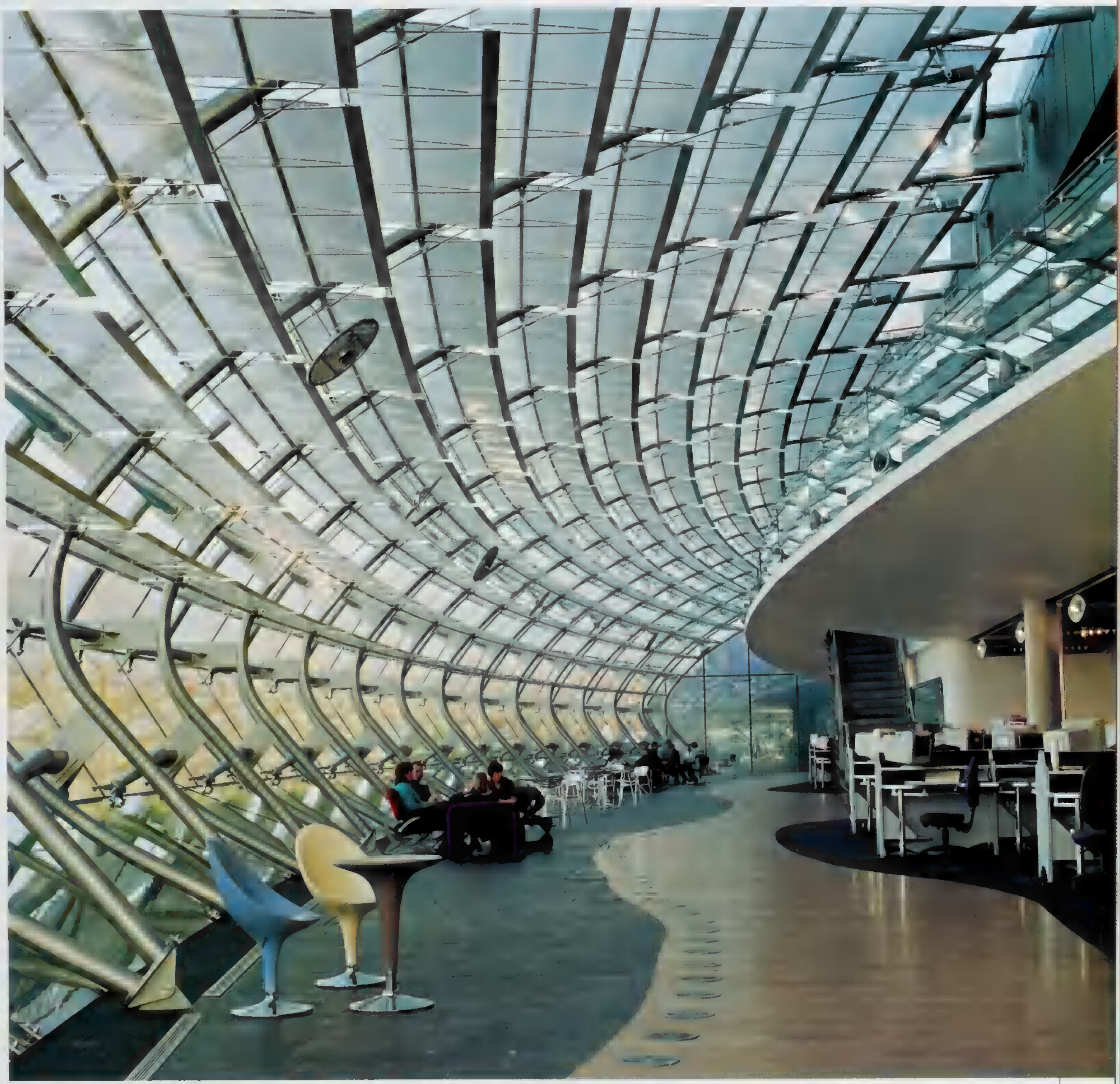


PHOTOGRAPHY: © TIM SOAR (TOP); JOHN IAN MACLEAN (BOTTOM RIGHT)

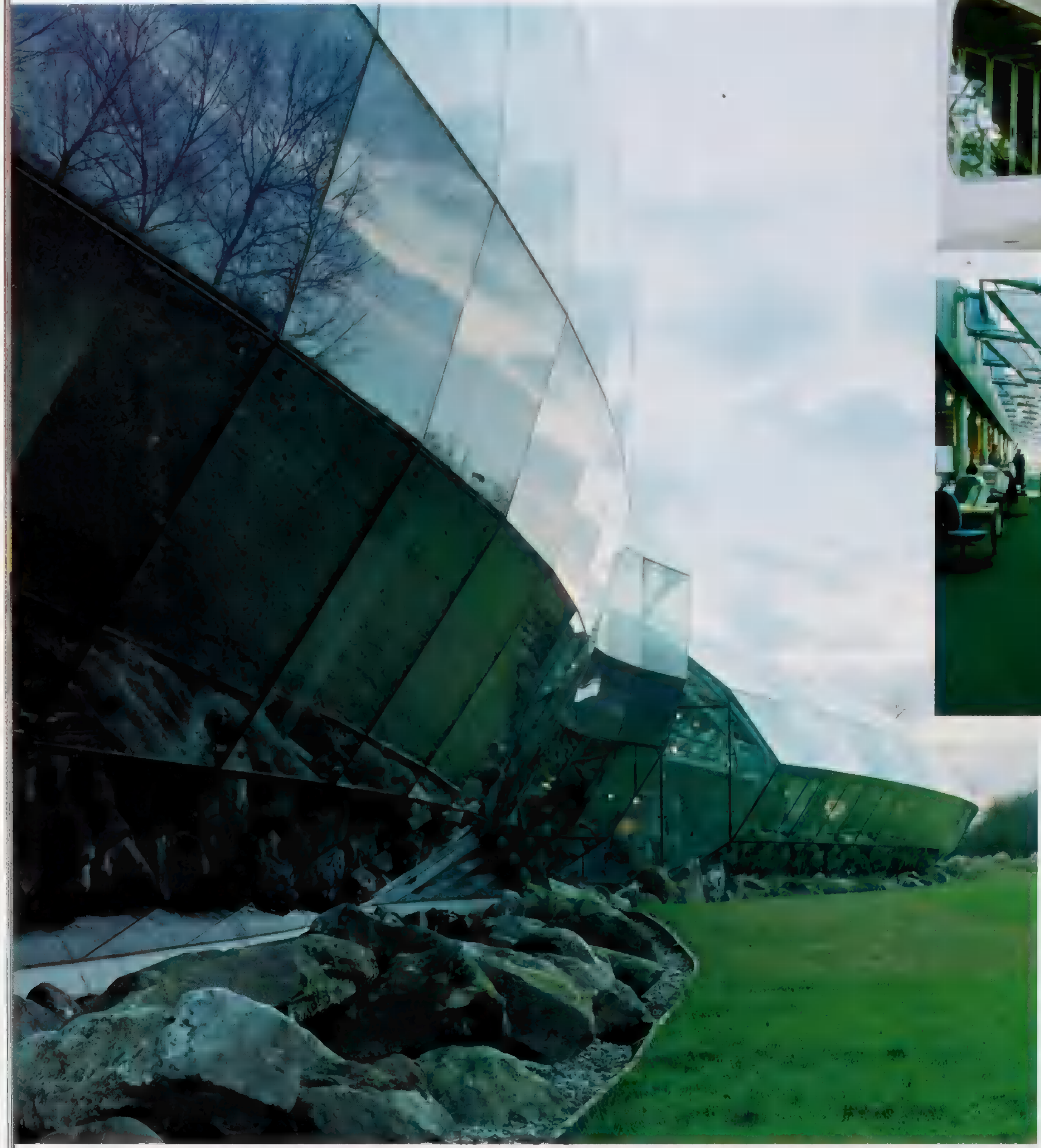
By Adam Mornement

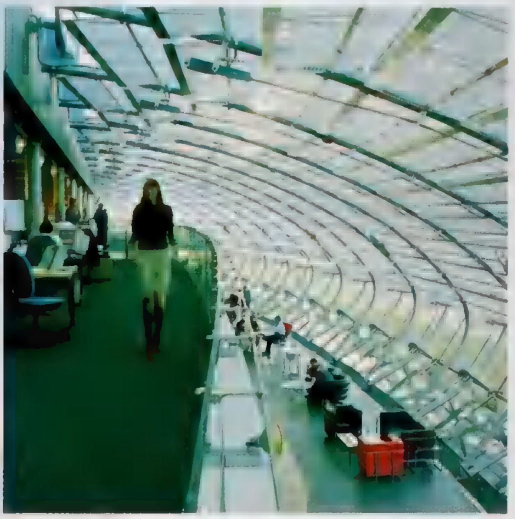
A British call center with space-age attitude

The British call center Cellular Operations is a deliberately playful reinterpretation of a building type with a worldwide reputation for mediocrity. Located near Swindon, a Wiltshire market town with a population of 200,000 approximately 100 miles west of London, it was designed by London-based Richard Hywel Evans Architecture and completed at the beginning of last year.

Marketing guru Ric Lee, chairman of Cellular Operations, wanted a building that employees would drive past and say, "I work there." And the response would be: "You work there? Wow, what's it like inside?" He certainly got what he wanted. "The brief was simple," says Lee. "I wanted an extraordinary building at an ordinary price."

The building is made up of two key components: a stark, Miesian entrance "cube" and a three-story, 340-foot glass atrium, which houses the open-plan work areas. The 48,500 square feet of usable space





Cellular Operations has proven that a modern and comfortable office environment pays for itself in the long run: In the 16 months that the call center company has been based in its new building, staff turnover and absenteeism have been under half Britain's national average.

PHOTOGRAPHY: © JOHN IAN MACLEAN (LEFT); TIM SOAR (UPPER RIGHT TOP AND BOTTOM)

are supported on slim, steel tubular columns set in a concrete base. But if the external structure is simple, the interior is anything but.

It has been designed as a series of choreographed "event spaces." In the context of Cellular Operations, this manifests itself in a variety of ways: The sliding entrance doors make a Star Trek–like *whoosh* upon arrival and departure, the washrooms are all based on different themes, and the elevator rises and falls in unison with an ornamental fountain.

The design details also accommodate the needs of the staff. Lee and Evans knew that the average age of the workforce would be under 25. "So when we put backlighting, the idea was to re-create the atmosphere of a nightclub, where most of the staff had probably spent the previous evening," Evans jokes.

There have been teething problems. Lee points to the heating and ventilation system as being problematic. The innovative and environmentally sustainable system draws cool air from the surface of the adjoining lake and disperses it through a network of vents running through a pressurized floor void.

But the building works. It is flexible, open-plan, and infused with natural light throughout. Perhaps above all, the Cellular Operations call center is a building that makes people smile. ■

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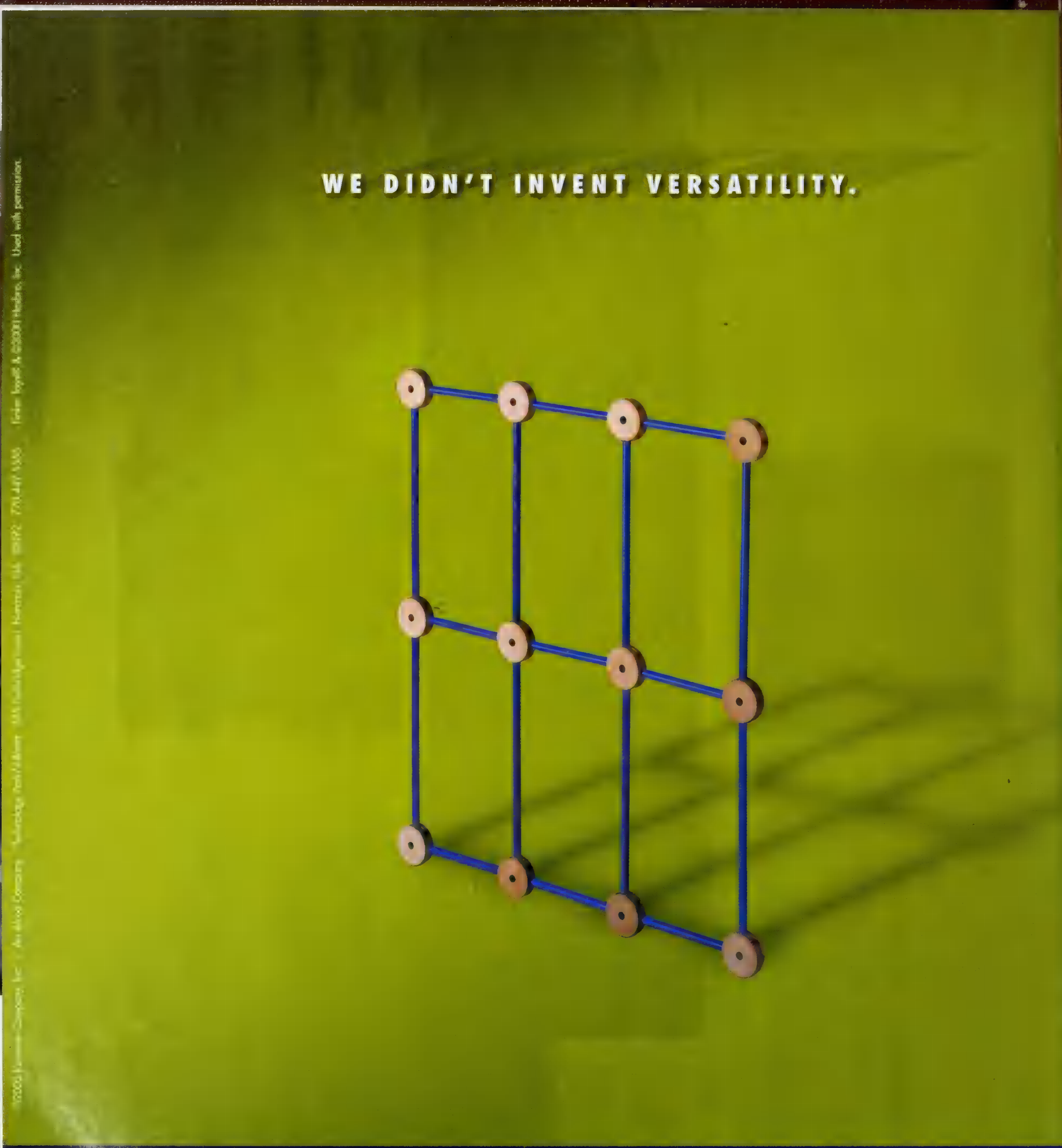

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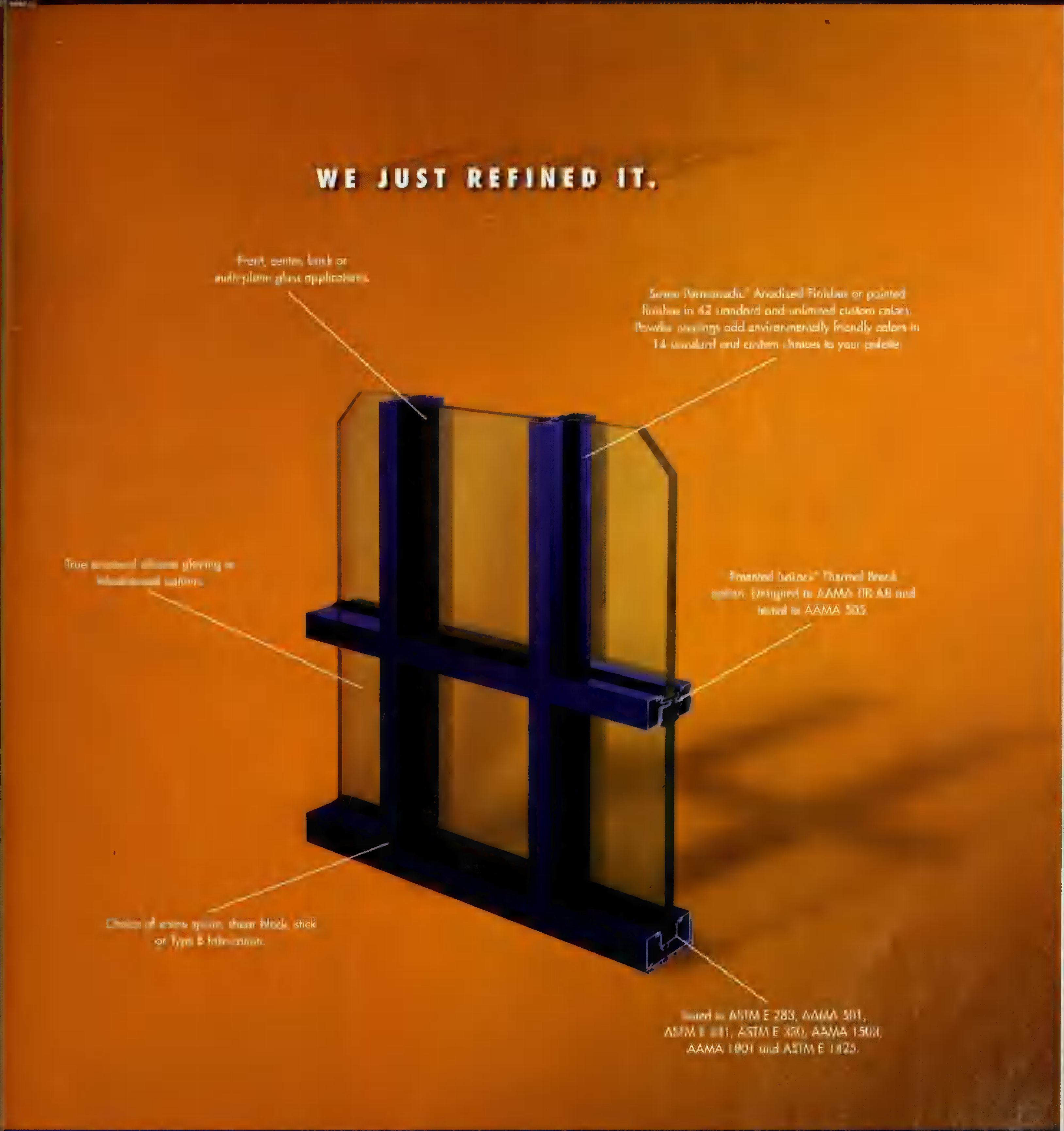
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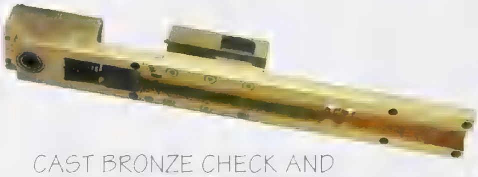

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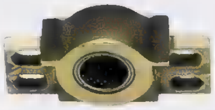

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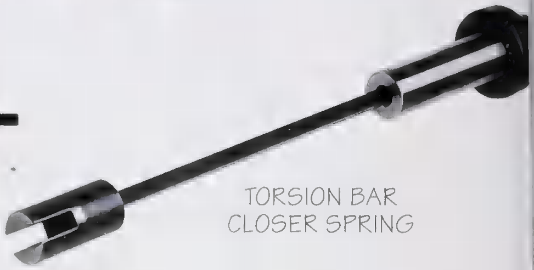

TORSION BAR CLOSER SPRING

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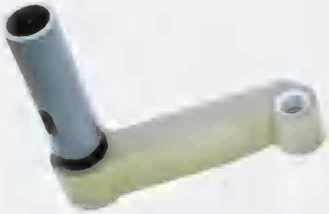

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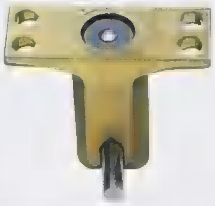

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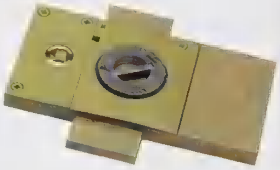

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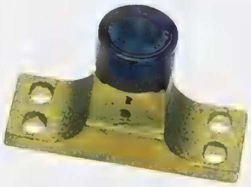

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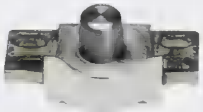

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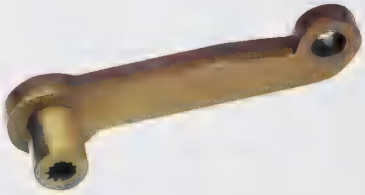

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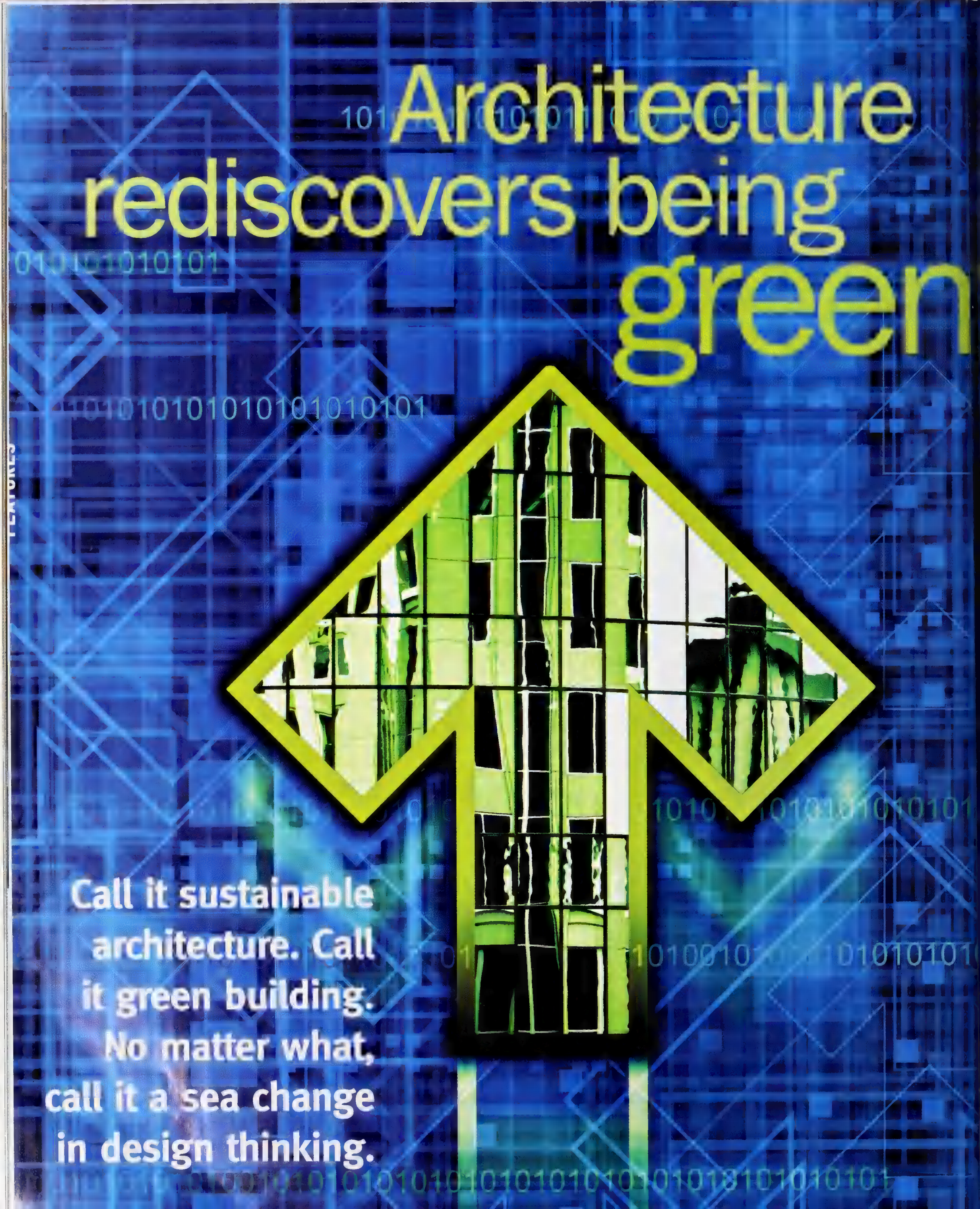
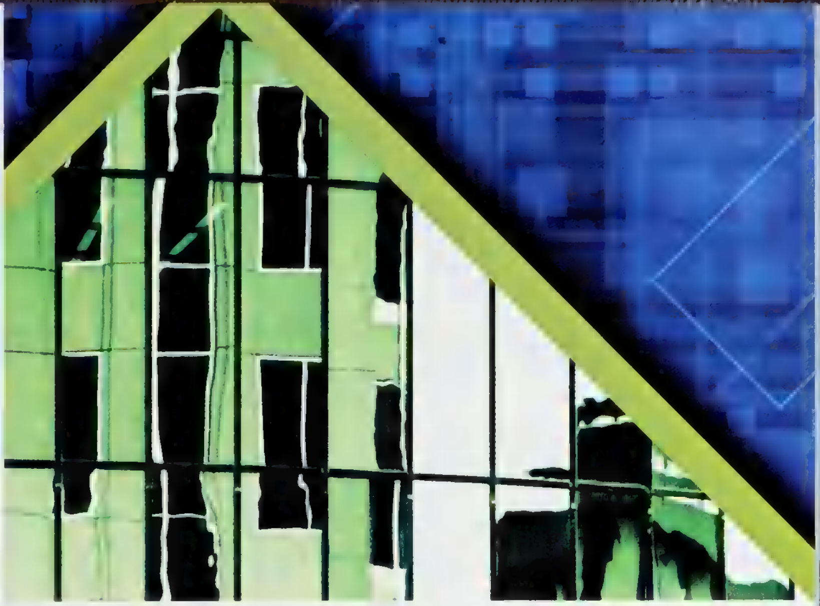
CIRCLE 50 ON INQUIRY CARD

Architecture rediscovers being green



Call it sustainable architecture. Call it green building. No matter what, call it a sea change in design thinking.

Those who design the built environment are being called upon to protect our natural resources. Architects have learned that green design involves going back to basics—and inviting more players to the drawing board.



By Deborah Snoonian, P.E., and Kira L. Gould

If you haven't noticed yet, there's a revolution afoot—one that started nearly 40 years ago and has picked up serious momentum since the early 1990s. Mandates at all levels of government, coupled with concerns about rising energy costs and dwindling natural resources, have given rise to unprecedented interest among U.S. design professionals in protecting and preserving the natural environment. For the first time, developers and owners must ensure their properties aren't gas guzzlers—the sport utility vehicles of the built environment. And they need architects to help them do it.

This is good news all around. Research and anecdotal evidence have shown for years that buildings with abundant natural light and ventilation, high indoor-air quality, and other sustainable design elements create an atmosphere in which occupants are happier, healthier, more productive, and less likely to leave their jobs. Moreover, such buildings are less expensive to maintain. Owners have started to use sustainability as a selling point for their properties, and they can charge higher rents for buildings with these amenities. At the same time, tenants enjoy productivity gains and increased employee retention. Call it sustainable design, green architecture, or green building. But no matter what term you use, the movement is transforming the way buildings are designed, constructed, and operated.

Many architects, faced with navigating these waters for the first time with their clients, are daunted by the prospect of accommodating the complex set of issues demanded by sustainability. Yet in many ways, building sustainably is nothing new under the sun. The main tenets—accommodating the site and climate, preserving resources, and using local materials and expertise—are ancient techniques, neglected since the Industrial Revolution, when it became possible to manufacture massive volumes of construction materials and transport them long distances [see "Revisiting," page 92]. Designing with the environment in mind is as much about unlearning bad habits as it is adopting and updating old ones.

One thing that's changed, though, is that today's sustainability demands a higher level of knowledge and sophistication than it did hundreds of years ago. Modern buildings are a complex, interrelated set of systems, materials, and products, whose components are manufactured and assembled in disparate locations using a wide array of methods. And today's architect has a better understanding of how different building components interact to affect performance. That doesn't mean green buildings need to be complex or high-tech—there are simply more variables to consider. Architects who practice green design are embracing new work practices, multidisciplinary thinking, and integrated design techniques so they can minimize the environmental disruption inherent in any construction project.

Kira L. Gould is a freelance writer living in New York.

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Green shift in government

Who would think that the U.S. military, not known for its extravagant spending on construction, would be a leader in the green building movement? The trend began with a series of executive orders signed in the early 1990s, which aimed to reduce the overall life-cycle cost of government buildings. At that time, military leaders were aiming to attract talent, retain soldiers, and improve morale—and they turned to green building as a partial solution. The Naval Facilities Engineering Command (NAVFAC) initiated its sustainable design program in 1993; five years later, it became the first federal agency to require its facilities to be designed sustainably. This was a significant coup, considering that NAVFAC is responsible for all domestic construction for the navy, air force, and marines, along with a portion of army and overseas construction. In conjunction with the navy's efforts, the U.S. Army Corps of Engineers also began to research ways to go green, even developing its own green rating system for military construction projects.

Nevertheless, most private developers continued to resist using green building techniques until the last couple of years, when government agencies on the federal and local level began to adopt the LEED rating system developed by the U.S. Green Building Council (USGBC), a growing trade group of more than 740 stakeholders in the built environment. "For years, developers and owners were taking a wait-and-see attitude about green building," says Ross Spiegel, incoming president of the Construction Specifications Institute (CSI) and a board member of the USGBC. "Now government agencies are tying accomplishment of green building objectives to tax credits and other incentives. Naturally developers and owners are going to want to do it, and architects have to respond." Today's owners

are especially anxious about keeping operating costs down, which has provided further incentive to build green from the ground up.

Shrugging off misperceptions

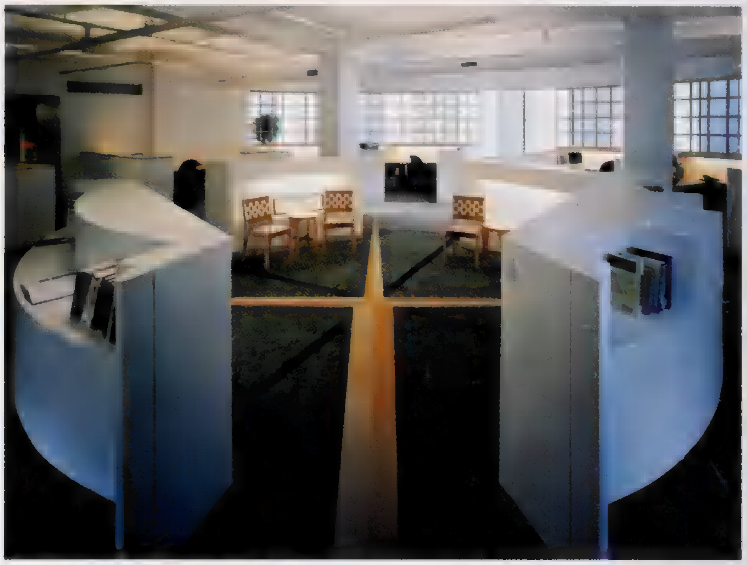
No matter how energy- and resource-efficient a building is, its staying power is determined by how deeply it appeals to the senses, how well it fits into its community, and how comfortable it is to use. In this light, architects are beginning to realize that sustainability and aesthetics are entirely compatible goals. Randy Croxton, principal of the Croxton Collaborative of New York, believes that these issues are helping to bring architecture back to its rightful course. "Intelligent green design can result in spare, beautiful buildings that will resonate with those who work or live in them. Such buildings will also be more highly valued over time, because they outperform traditional buildings in terms of energy savings as well as intangibles such as worker productivity and morale."

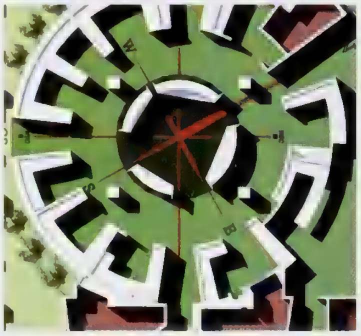
Though conventional wisdom has always held that green buildings had higher capital costs—a real stumbling block for developers—recent examples show that this may be because sustainability goals have been set too low in the past. "We're learning that projects that target higher performance levels with regard to energy savings may actually cost less to build," says Bill Browning of the Rocky Mountain Institute (RMI), a nonprofit advocacy and consulting group based in Snowmass, Colo. Buildings designed to reduce energy use by 50 percent, for instance, may require extra glazing, special lighting, and specific system controls, but these costs are offset because less powerful HVAC and

RATING YOUR WAY: The green yardstick

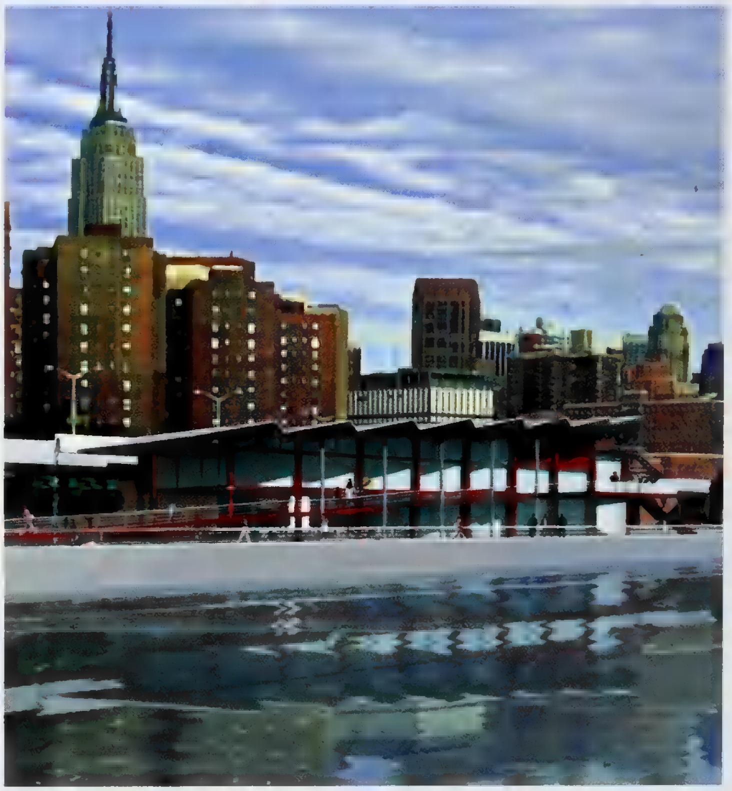
Since the late 1980s, several systems have been proposed to measure the sustainability of buildings; the metric that's taken hold nationally is the Green Building Rating System, developed by the Leadership in Energy and Environmental Design (LEED) program of USGBC. LEED is a system for rating commercial, institutional, and high-rise residential structures. Buildings are awarded points for incorporating criteria in six categories: sustainable sites, water efficiency, energy efficiency, materials and resources, indoor air quality, and innovative design processes. Depending on the number of points received, a building is given platinum, gold, silver, or basic certification. The design team must document the strategies used to meet the criteria and submit them to USGBC for review and approval. USGBC hosts training workshops for LEED and also offers an accreditation exam for designers.

Several municipalities—Portland, Ore.; Seattle, Wash.; and Battery Park City in Manhattan—have adopted LEED and set minimum green standards for new construction. In some cases, developers are offered tax incentives, rebates, and other perks for projects that meet or exceed the minimum. Peter Templeton, LEED program manager, explains that agencies can weight the criteria to address regional or project-specific concerns: "For instance, one county in Illinois will likely adopt LEED with a provision that developers must have a minimum number of credits in energy efficiency to qualify for certification." Future





Beldon Headquarters
New York City
Architect: *Croxton Collaborative Architects, P.C.*
An open, circular layout around a central court (above and left), with a compass at its center, evokes images of the earth and creates a campaign-like feel for this environmental advocacy group.



Stuyvesant Cove Environmental Center
New York City
Architect: *Kiss + Cathcart*
This demonstration and education facility was designed using a loose-fit approach. Its rooftop will incorporate photovoltaics capable of powering the entire building off the grid—a first in New York City.

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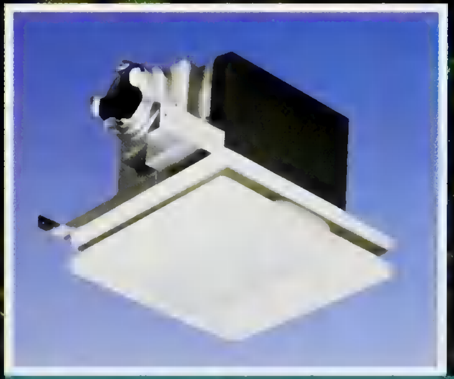
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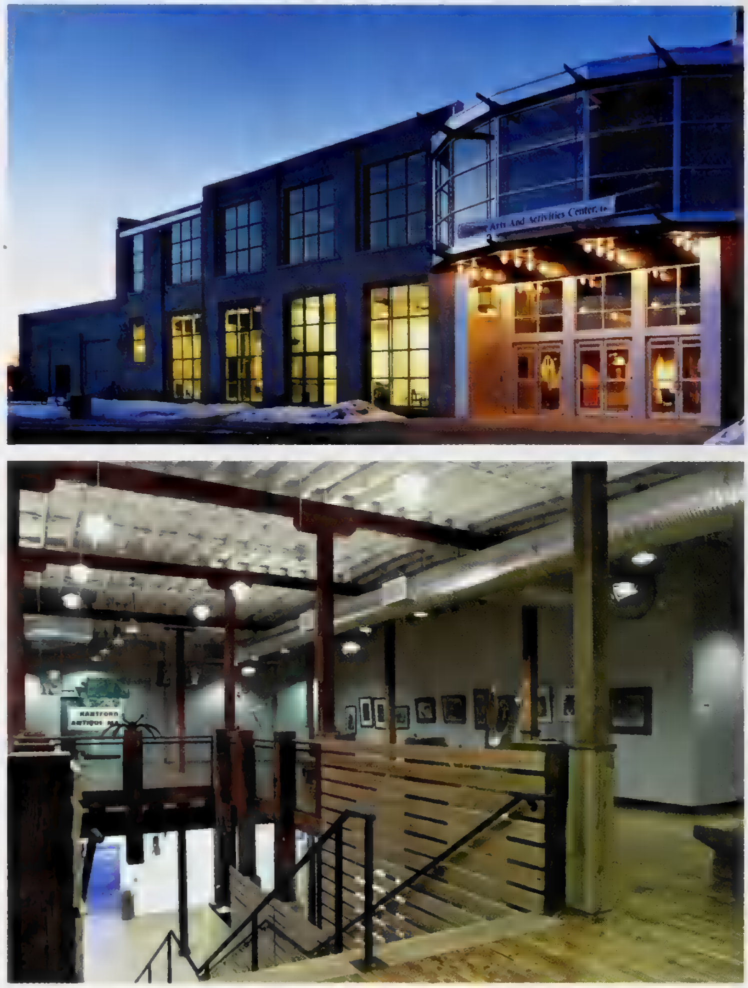
mechanical systems can be specified. "When energy-reduction targets are only 20 to 30 percent, this offset isn't as likely to occur."

Such cost savings require an integrated, whole-building approach in which the design team evaluates building elements with respect to how they affect one another, rather than in isolation. For instance, when Flad & Associates of Madison, Wis., designed a four-story pharmaceutical research laboratory for Pharmacia in Skokie, Ill., the architects considered using a heat-recovery system to lower energy consumption. An initial analysis showed that the system wasn't cost-effective, but the design team identified other energy-saving strategies that reduced the size (and therefore the cost) of pumps, chillers, and piping. In the end, the payback period on the heat-recovery system was reduced to an acceptable level. "The strategies that helped make this happen involved the combined knowledge of several disciplines on the design team," says Steven Schultz, sustainability and energy manager for Pharmacia.

Lending a helping hand

The greening of the design industry has itself become a mini industry: Trade associations, journals, product directories, and Web sites offer case studies, advice on selecting materials and systems, and lessons learned. And firms committed to green design practices are investing in people, technologies, and practices to help them wade through these data and get the job done. Hellmuth Obata + Kassabaum (HOK), for example, is creating an online system to help its architects investigate and select green products. "We also call on chemists, toxicologists, and other scientists with expertise in interpreting the environmental data we get from manufacturers," says William Odell, head of HOK's sustainable design practice.

Green products in particular have been a focus of interest because of the effort involved in sorting through competing claims made by manufacturers eager to provide products that fit the bill. "It's impossible to look over the shoulder of every single supplier to make sure they're giving you

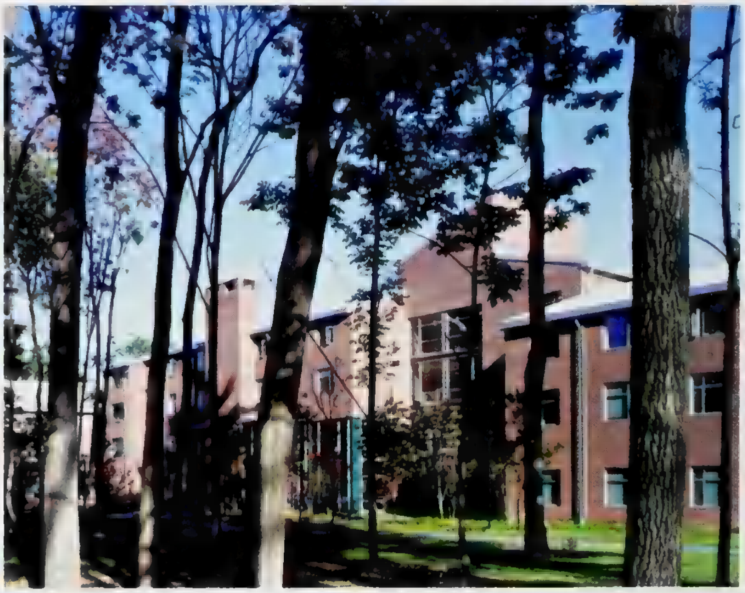


Schauer Arts Foundation
Hartford, Wis.
Architect: *Holabird & Root*
Eight former canning factories were connected and renovated (top) to create a gallery and performing arts center. Salvaged lumber from the factories was used for the staircase and lobby (above).

versions of the standard will be available for commercial interiors and residential construction. An operations rating system is also in the works, which would reward owners whose facilities are performing as intended.

The standard is already being acknowledged as a national benchmarking tool. "The adoption of LEED has created a kind of peer pressure that's transforming the market," says Jason F. McLennan, director of Elements, the sustainable design division of BNIM Architects in Kansas City, Mo. Architects unfamiliar with green building use LEED as a guide to incorporating the strategies, which is no doubt making projects greener than they might have been. Nadav Malin of EBN is helping to develop the standard's next version. "Many organizations use LEED to choose sustainability concepts, without going through the additional step of getting certified. Others find that the discipline and documentation needed for certification help to ensure that a project's green goals aren't eroded."

Yet some feel LEED also inherently casts a checklist framework onto the design process. Malin acknowledges that there's work to be done to ensure that the standard continues to emphasize integrated design processes, as well as outcomes. *KLG*



Residence Hall, Penn State Berks
Reading, Pa.
Architect: *Susan Maxman & Partners*
A stand of trees was preserved when this dormitory was built on a wooded, hilltop site. The building hugs the hill and threads through the forest to minimize excavation and site disturbance.

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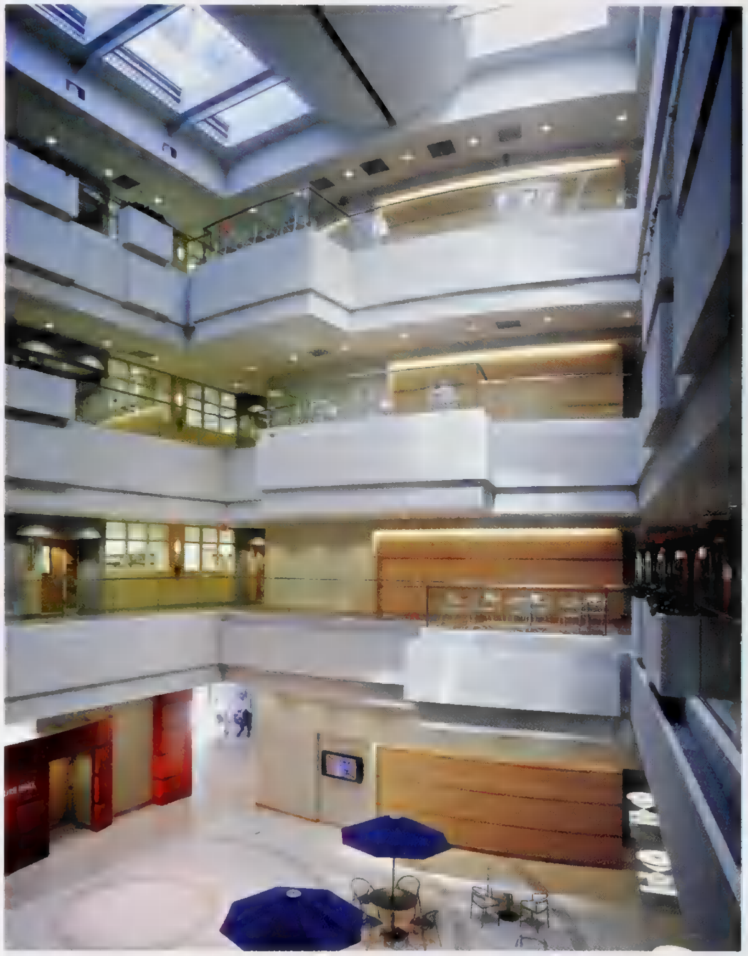
what they say they're giving you," says Spiegel. A unified certification or labeling system for green products may be years away, but efforts to evaluate and catalog them have been under way for some time. *GreenSpec*, developed by Environmental Building News (EBN), is a product catalog and directory of manufacturers and claims, with guideline specification language; the products are investigated and screened by EBN before inclusion. EBN's Green Building Advisor software offers strategies for green design along with successful case studies. Green Seal, an environmental labeling organization, has awarded its Seal of Approval to select building products.

Despite the tools available, selecting green products remains a difficult exercise because it always involves trade-offs. Is it better, for instance, to use locally harvested lumber from a noncertified forest, or lumber from a certified forest in Asia that must be shipped halfway around the globe? Are durable materials preferable because they don't need frequent replacement, or unfavorable because they don't break down easily by natural processes? There are no fully right or wrong answers to these questions. A product's sustainability depends not just on its content and manufacturing method, but also on site-specific environmental concerns, the project type, and the use for which it's intended. In the end, architects must simply make informed choices and find other ways to ameliorate the overall environmental consequences of their projects.

Keep it simple, make it flexible

Architects are learning, or rather relearning, that the buildings resulting from using green design strategies aren't always exotic or complicated. Durable structures that are built to be adaptable for future uses and new technologies—a tenet known as loose-fit or universal design—exhibit the core values of the sustainability movement. And considering that up to 30 percent of landfill waste in the U.S. is composed of construction and demolition debris,



Pharmacia Building Q
Skokie, Ill.
Architect: *Flad & Associates*

A light-filled atrium, an unusual feature for a laboratory building, acts as a central gathering spot for employees.

PHOTOGRAPHY: © MESA VERDE NATIONAL PARK; STEVE HALL/HEDRICH BLESSING

REVISITING THE STORY OF 16TH-CENTURY ENGLISH GLASSMAKERS REMINDS US THAT THE ISSUES THAT MAKE GREEN DESIGN CRUCIAL FOR OUR TIMES ARE NOT NEW.

Green design is not new. Places like Mesa Verde, below, were inherently green. Their builders used local materials and knew how to orient their buildings to take advantage of the sun. Fuel was in short supply, so they used thermal mass to store heat for cold evenings and to keep their dwellings cool during the day.

Centuries later, the Industrial Revolution changed everything. It made new building materials available, allowed them to be transported over great distances, and efficiently delivered fuels such as coal, natural gas, and electricity. For a brief period in the U.S. during the last century, design for climate and conservation of energy were almost non-issues. Architects and engineers felt they could build almost anything they could think of. The downside is that each innovation that brought designers closer to this kind of absolute architectural freedom also seems to have introduced materials and demanded processes that were less green than those that came before.

The tale of the glassmakers

In his 1979 book, *Connections*, English author James Burke describes how most of the glass used in England prior to the mid-1560s was imported from the Continent. Then a glassmaker living in Belgium was given permission to enter the country and set up a wood-fired kiln, on the condition that he would teach his art to the English. By the 1580s lots of people were making glass in England, so many, in fact, that competition (especially with shipbuilders and metal smelters) caused an acute timber shortage. Glassmakers became itinerant. When wood supplies got too far from their kilns, causing the price of wood to go up, they would simply relocate. Timber along the rivers was particularly favored, because water could be used to ship the finished glass to market. Deforestation along the Thames became so severe that Parliament made it illegal to make glass within 22 miles of its banks. Later, wood near certain forests and the coasts was off-limits, and finally, there was no glassmaking allowed within eight miles of any river. The shortage of

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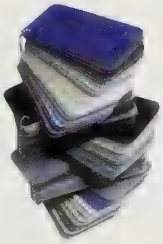

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adapting existing structures or reusing their materials are simple ideas that can make significant contributions in environmental stewardship.

For instance, buildings can be designed for conversion to power sources that are off the grid. With an eye toward rising energy costs, Croxton Collaborative has been designing buildings that can easily be retrofitted to use renewable energy sources such as photovoltaics, which will likely become economically viable within the life of the existing mechanical system. Over time, the renewable systems will come online when peak demand conditions occur. "You are doing a disservice to clients if you're not helping them take advantage of energy-efficiency strategies," says Croxton. One such project, scheduled for completion this fall, is a new municipal office building in Chattanooga, designed by Croxton Collaborative in a joint venture with Chattanooga-based Artec. The project involved an aggressive daylighting program that will bring lighting loads far below normal. Croxton says, "The building can be retrofitted by reglazing the east and west facades with photovoltaics, installing roof-integrated photovoltaics, and converting the cooling loads to an on-site source." This retrofit will probably happen in 20 to 25 years, at about the time when the existing mechanical system would require replacement anyway. The architect provided the owner with a manual explaining how the building is designed to make the conversion.

Responsible designers also find ways to keep building materials from being carted away at the end of a project's life. HOK is currently designing flexible workspaces for a pharmaceutical company. "Usually it takes weeks or months to convert a laboratory to a different type of space," says Odell. "But pharmaceutical companies often need less laboratory and more office space once they're done with a research project, so they can apply for patents and FDA approvals. We want them to be able to convert a laboratory to an office space within an afternoon, using modular systems that can be easily dismantled and reassembled, so that no furniture or materials need be discarded."

Green designers take maximum advantage of the opportunities offered by adaptive reuses. Chicago firm Holabird & Root recently transformed eight interconnected canning factories into the Arts and Activities Center for the Schauer Arts Foundation in Hartford, Wis. Building materials from the old factories were repurposed to create staircases, benches, and furniture. New steel trusses for the theater roof were created from the existing structure by constructing them in small pieces, then moving and installing them manually. Auditorium seating was salvaged from a local hospital and a high school.

Approaches lifted from life science have also begun to take root, mostly in siting techniques. "Architects treat buildings and sites like machines, when they should be regarded as organisms—systems that can learn and heal themselves," says William Reed of Regenesis, a consulting firm specializing in sustainability issues. He cites a mixed-use development in the southwestern U.S. where the developer and residents sought to minimize site damage during construction. Research indicated that the site once had a stream running through it, though it had dried up decades ago when development first began in the area. "We asked the developers, do you want to maintain the level of environmental quality that's at the site now, or do you want to give it the potential to return to its natural state?" They decided on the latter. Site work and landscaping restored the area to its

LOOSE-FIT BUILDINGS ARE DESIGNED TO ADAPT TO FUTURE USES AND NEW TECHNOLOGIES.

timber was so severe that there was not enough wood to make both the glass and lumber for the buildings that called for it. When the wood was all gone, they switched to coal to fire their kilns.

The story of the English glassmakers is an archetype for almost everything that can go wrong when the demand for an industrially produced building material begins to put pressure on its manufacturer's ability to find fuel and to transport products where they are needed—the very same issues that over 400 years later are pushing architects to design green buildings. The first problem for the glassmakers was that the process they used to make the glass was not very energy efficient, and caused air pollution. Even though wood is a renewable resource, it was depleted far faster than it could grow back. The clear-cutting likely caused the decline of plant and animal species, caused erosion, and clogged streams with silt. Unless it was made close to market, the glass wasn't practical. Today, we've cut these kinds of costs by using rail and truck transport, but such methods require considerable amounts of petroleum, as well as land for tracks and highways, and also create greenhouse gases.

Glass changed building form irrevocably, introducing light and transparency and taking away the heavy appearance that had always been characteristic of European buildings. The use of large expanses of glass also eliminated thermal mass, bringing about wide swings in heat loss and heat gain. This was a huge departure from the local, climate-based logic that had been the basis of building design for millennia. However, as long as conditioning systems continued to evolve and energy was cheap enough to operate them, this was a moot point. In time, the capabilities of glassmakers and HVAC systems improved so dramatically that one is hard pressed to think of Modern architecture without buildings like the Farnsworth House.

The energy-rich new world

During the 20th century, the mass harvesting of cheap energy and improved techniques for manufacturing allowed for the production of cheaper materials. According to *Engineering News Record*'s weekly cost index, cement costs 20 percent less today than it did in 1913, even though energy still accounted for 30 to 40 percent of the cost of its manufacture in 2000. Today the cost of steel is down by 63 percent since 1913, even though 15 percent of its 2000 cost was for energy.

These were the very materials that made possible the stylistic leap from heavy masonry skins, concrete structural systems, and small operable windows typical of pre–World War II buildings to the sealed, lightweight, aluminum and glass curtain walls, and steel structural systems of the Modern movement. Was all of this because architects decided it was to be so? Not entirely. As with the glassmakers, it was the technical developments that changed everything. Steel, concrete, aluminum, and glass were getting cheaper, central HVAC systems were becoming practical, while the cost of labor was going up. Today, labor is 5,789 percent more costly than in 1913. The recent lightweight steel-and-glass buildings could be put up faster and required less

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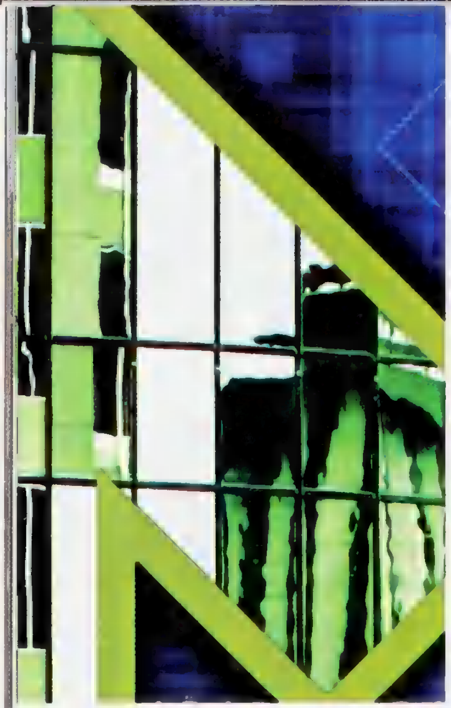


former condition. Within a year, water trickled in, and the streambed hasn't run dry a day since.

Redesigning design

Perhaps the greatest challenge in designing for sustainability is changing long-ingrained design practices and habits. Rafael Pelli of Cesar Pelli & Associates says, "When we talk about green building, we are really talking about redesigning the design process—rethinking everything from the team to the schedule and pace of the design." Enlarging the design team to include multiple disciplines, developing goals for sustainability early in the project, and assessing how each design decision affects the overall performance are especially important for projects that present special challenges. For the Pharmacia project, the design team had to overcome some grim statistics. Schultz says, "Laboratories typically consume 5 to 10 times as much energy as office buildings with the same square footage, in part because of the large volumes of outside air required for fume hood make-up air." Architects at Flad & Associates added engineers, building occupants, and Bill Browning of RMI to their design team. At the outset, the team split into four groups: materials and landscaping, lighting and energy, mechanical systems, and building envelope. Each group met to discuss sustainability strategies. Over 90 ideas were generated during this process, of which 80 were implemented. "Some designers feel that since labs are high-energy consumers, applying green strategies is meaningless. We wanted to prove them all wrong," Schultz added.

The next revolution

Recent examples of green buildings serve to remind architects that sustainability rests on the long-standing basics of smart design. Odell recalls a telling anecdote: Excited about a project he was working on, he told a favorite aunt about a high-rise development in which all the water that fell on the site was collected in a cistern, reused to flush toilets, and treated before being discharged. She eyed him suspiciously when he finished his story, and asked, "What's new about that?"

Today's architects, like those of generations past, are well aware that natural resources aren't infinite. That's not to say there isn't more to learn about designing to protect the environment. "In five years we might all look back and think the things we're doing right now are dumb," Odell adds. As architects begin to apply the concepts and work with other disciplines to accomplish green goals, their efforts will result in uneven outcomes at first. Croxton says, "As sustainability moves from being a marginal idea to a widely accepted one, there will naturally be projects that only partially realize its concepts. We're in that awkward phase right now. In time, issues such as energy deregulation and rising fuel costs will weed out weak examples of green building." Though benefits such as increased productivity and improved morale may be difficult to quantify, they're also difficult to argue against. Happy tenants beget happy owners, which may be all it takes to convince them to take the movement seriously.

LEARNING AN INTEGRATED DESIGN APPROACH MAY BE THE MOST CHALLENGING ASPECT OF GREEN DESIGN.

What's on the road ahead? More research, more buildings, more growing pains, more lessons learned. The goal? In time, sustainable design concepts will simply be incorporated as inherent attributes of standard practice. "Going green" might be the buzz phrase du jour, but ultimately, it will become a survival skill—not just for earth's denizens, but for designers themselves. ■

labor than their counterparts from earlier in the century. The loss of still more thermal mass took a quantum leap, as life-cycle operating cost took a back seat to first cost. Curtain wall and glass buildings of all sizes proliferated in all climates in the U.S. for decades.

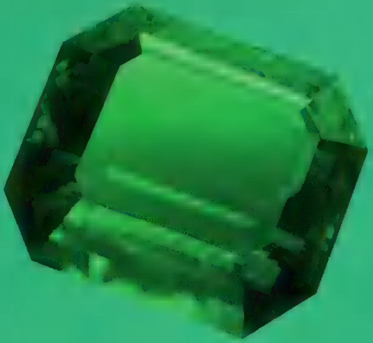
But our ability to build anything in any climate and to use energy freely did not last. With OPEC's oil embargo, we awoke in the 1970s in a country that had used up much of its easily accessible energy resources, just as the English glassmakers had done centuries before.

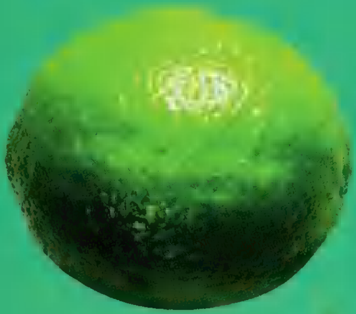
The Department of Energy's Energy Information Administration produces a publication called *Commercial Buildings Consumption and Expenditures,* which documents energy use in buildings. It incorporates so many variables that it is quite possible to come to incorrect conclusions when attempting to draw generalizations from it. However, when measured in 1994, buildings constructed before 1919 used 8.3 kilowatt hours (kWh) per square foot of building area. This number jumped to 18.8 kWh/sf for buildings constructed in 1990–92. Lighting and air-conditioning loads account for most of the additional electrical load that occurs in buildings built after 1950. In 1994, natural-gas consumption was practically the same in buildings built before 1919 as those built in 1992–93, at around 49 cu/sf. Holding all variables equal—climate, operating hours, type of use, floor space, and number of workers, and modernization of such things as lighting systems—pre–World War II buildings that have thermal mass, the ones built respecting the lessons of Mesa Verde, will almost always be more energy efficient than the light steel and glass buildings of the mid-20th-century.

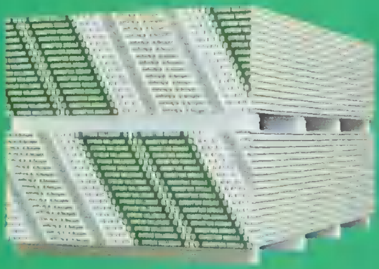
Going beyond the glassmakers

During the last 30 years, we have begun to relearn many of the same lessons the English glassmakers did 400 years ago. Yet we have the means to make much broader assessments of the consequences of our actions than the glassmakers did. We have powerful design tools and new guidelines to help us do effective, responsible design work. While concrete, steel, aluminum, glass, and thousands of other energy-intensive materials will continue to be manufactured and used, we can now grasp the long- and short-term environmental implications inherent in our design work and decide to act wisely.

Charles Linn, AIA







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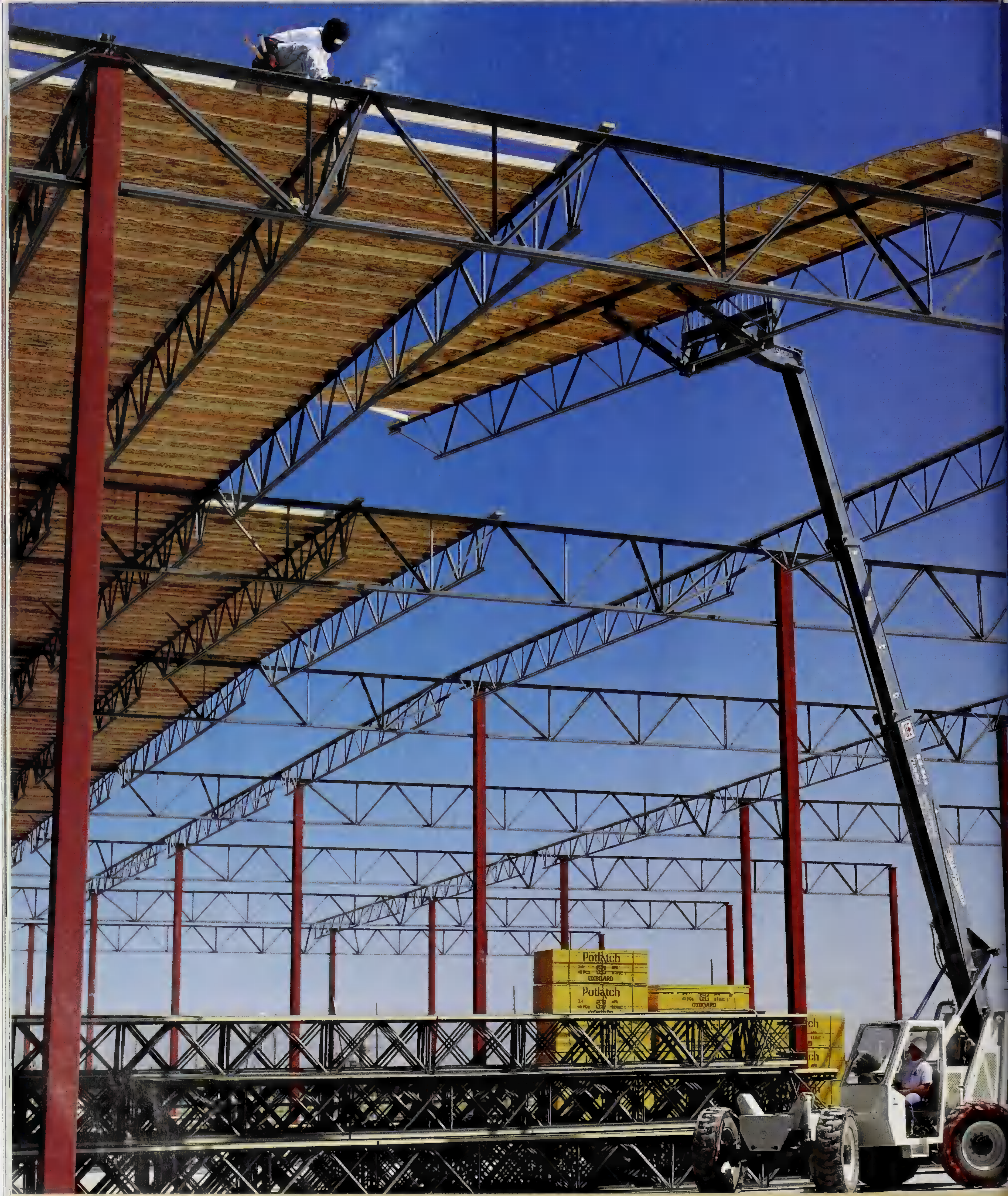

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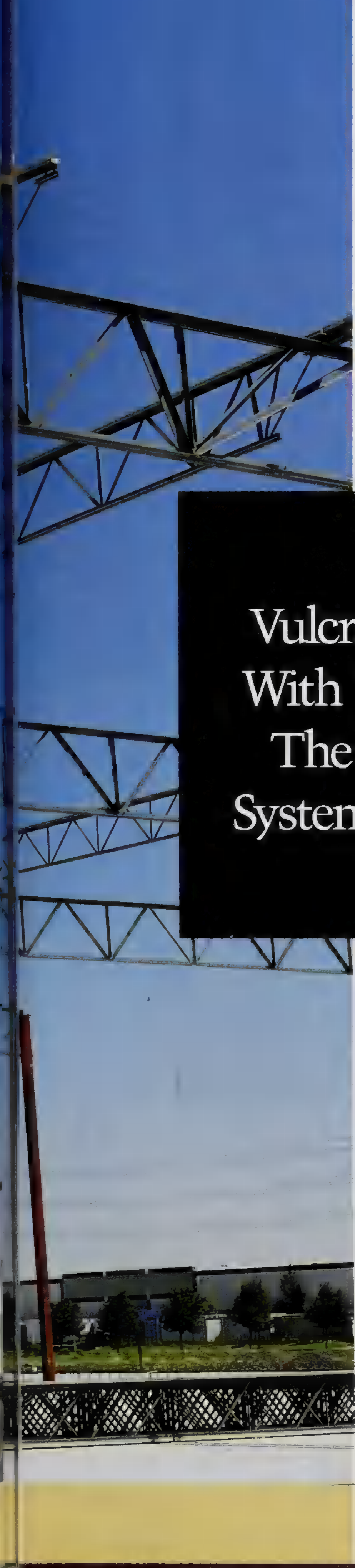

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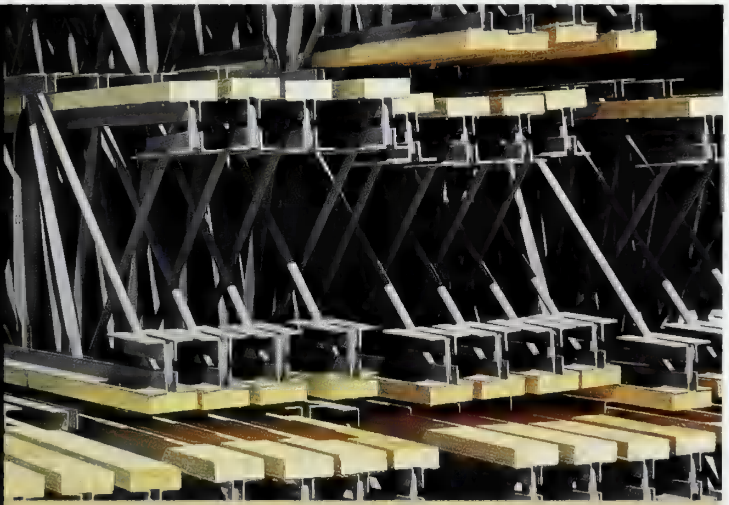

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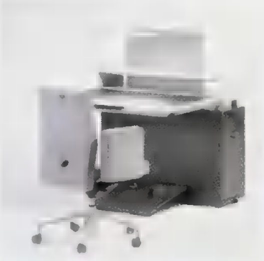

1 2 3 4 5

1 'M2' DESK BY BULO DESIGN TEAM • 2 'PUB ■ CLUB' CHAIR BY BULO DESIGN TEAM ▪
3 'H20' COLLECTION BY BATAILLE/iBENS • 4 'SCHRAAG' BY MAARTEN VAN SEVEREN •
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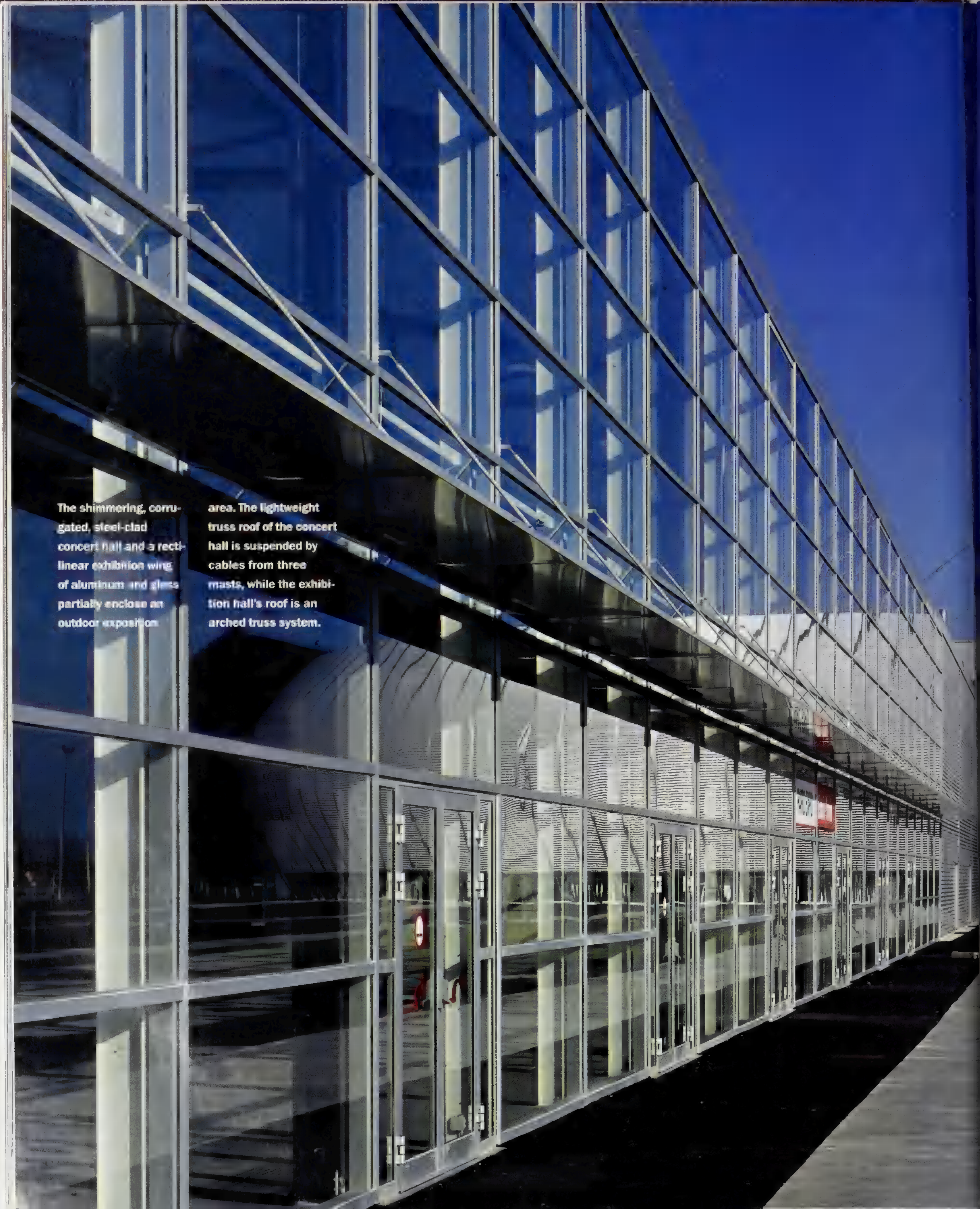
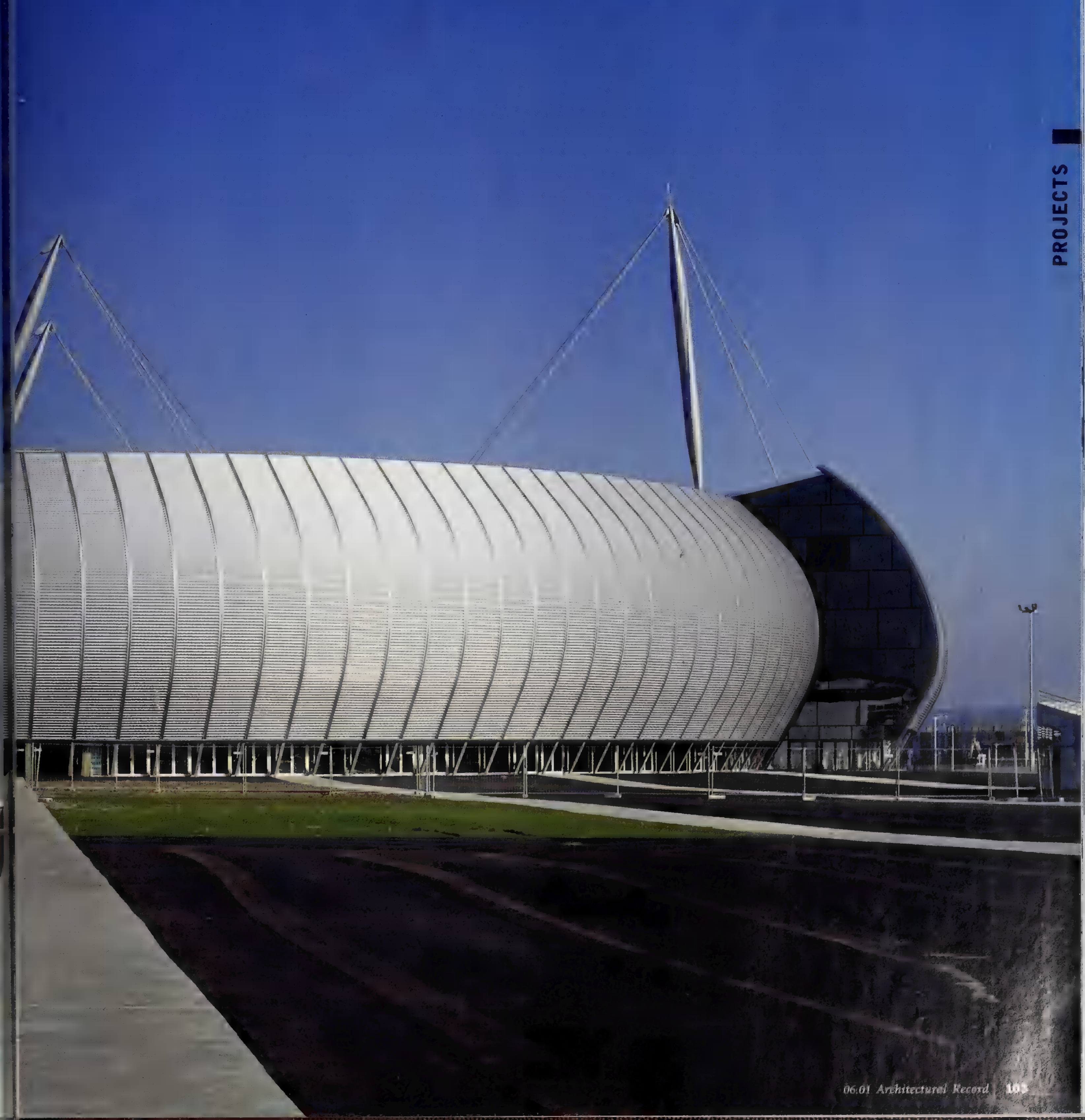
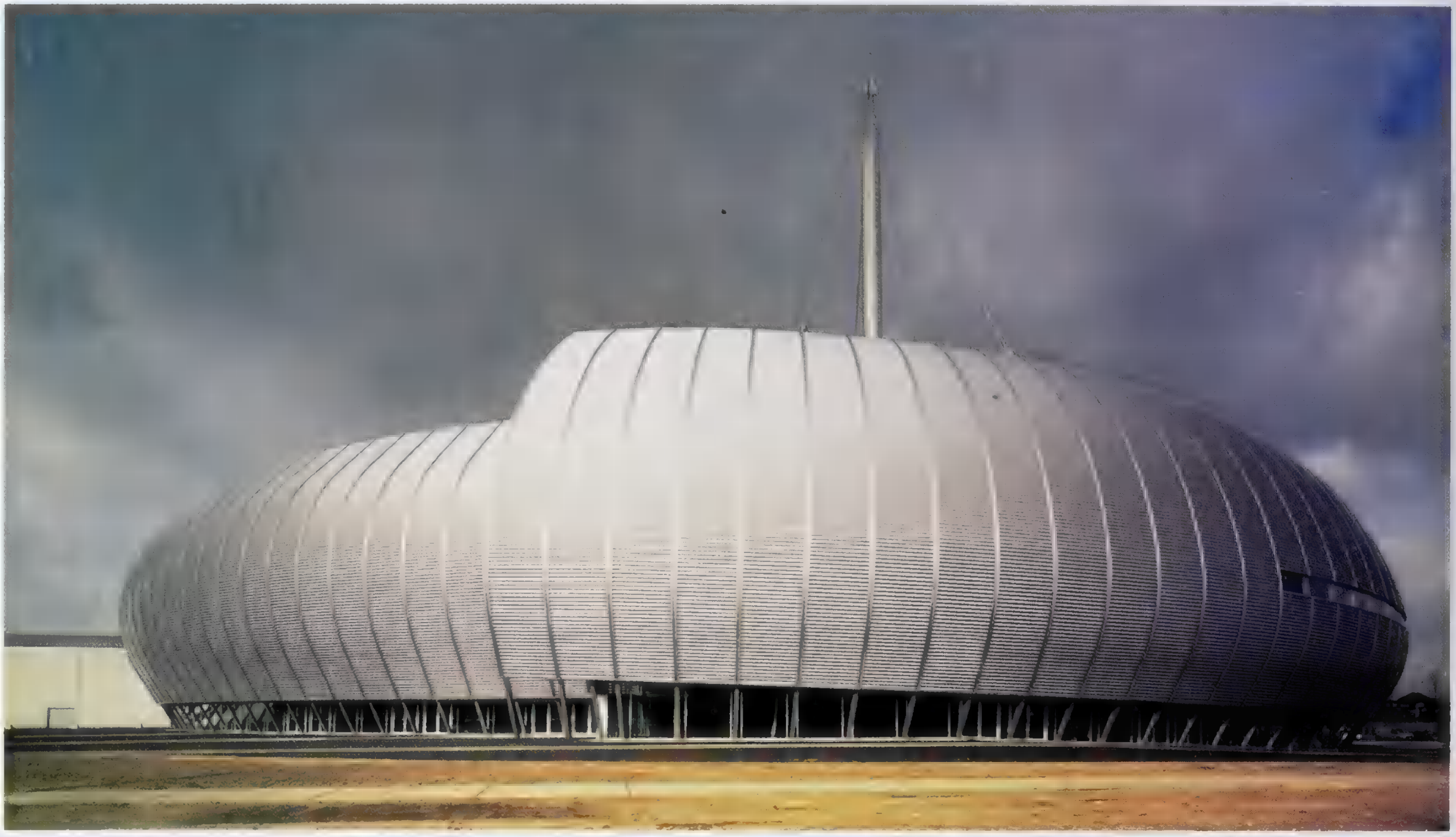


The shimmering, corrugated, steel-clad concert hall and a rectilinear exhibition wing of aluminum and glass partially enclose an outdoor exposition area. The lightweight truss roof of the concert hall is suspended by cables from three masts, while the exhibition hall's roof is an arched truss system.

Bernard **Tschumi** shows that materials and well-crafted construction really do matter with a **CONCERT HALL** in Rouen, France





By Suzanne Stephens

On the road to Rouen you do not expect to see a curved, gleaming object perched among Normandy's pastures like a giant UFO that just landed. Especially if you are en route to visit the famous Gothic cathedral Monet painted so often. All of a sudden, on a rather nondescript 70-acre site at the outskirts of the provincial port of Rouen, northwest of Paris, rises the Zenith Concert Hall and Exhibition Complex. The contrast with its context only serves to dramatize the lustrousness and futuristic quality of this totemic symbol to contemporary culture.

In true European custom, the design for the concert hall resulted from an invited architectural competition sponsored by the regional government. The winner was Bernard Tschumi, the Swiss-born architect who is the dean of Columbia's Graduate School of Architecture, Planning and Historic Preservation, and whose offices in New York and Paris saw the project through design and an intense 13-month construction process. The materials are basic—primarily poured-in-place and precast concrete, plus corrugated steel cladding. And they are straightforwardly, or shall we say, plainly, put together. "There are no self-indulgent details à la Carlo Scarpa," Tschumi says almost defiantly. Yet the quasi-circular hall and its rectilinear exhibition wing are executed with a level of craft and a clarity of form that make them striking. The gestalt is quite different from the interior complexity of Tschumi's suspended steel and glass ramp and window-wall assembly in Lerner Hall at Columbia University [NOVEMBER 1999, page 94], designed in association with Gruzen Samton, or, for that matter, Tschumi's previous enclosure-within-an-enclosure, Le Fresnoy National Studio for Contemporary Arts in Tourcoing, France[JANUARY 1998, page 86].

"THERE ARE NO SELF-INDULGENT DETAILS A LA CARLO SCARPA," TSCHUMI SAYS ALMOST DEFIANTLY.

It may look simple, but it's not. Tschumi based the design of the 7,000-seat concert hall on a concept he had devised for a multiuse urban development at Chartres in 1991, which featured three curved aluminum-wall ellipses with flat roofs suspended from masts. For the Rouen competition in 1988, Tschumi refined the parti so that there are two envelopes, one, the exterior metal skin (intended to be aluminum, but ultimately steel, for heft) that encloses the building proper; the other, the inner concrete shell around the auditorium. The space between the two envelopes is devoted to the lobby, cafe, and a dynamic interweaving of ramps and stairs.

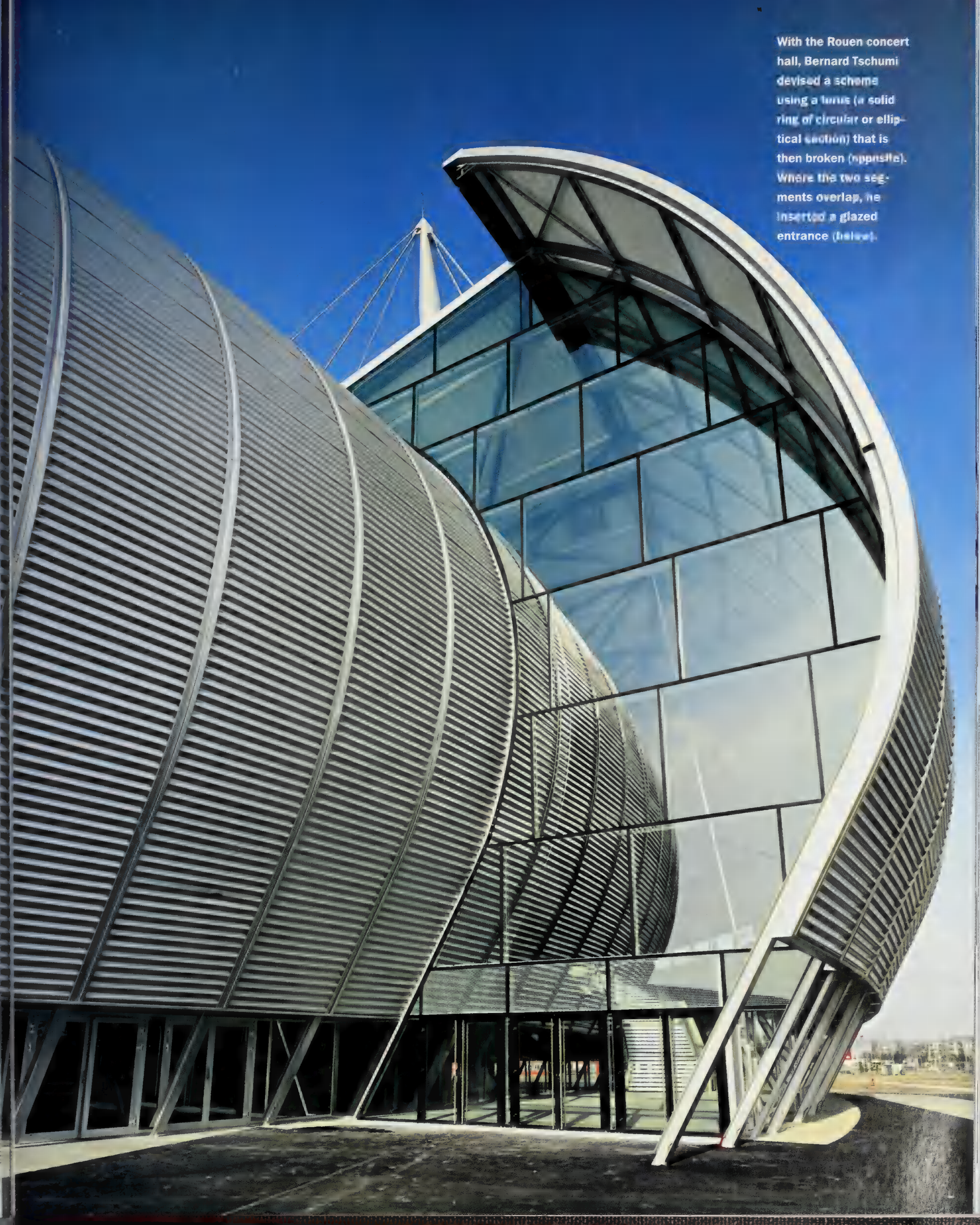
Other twists give the scheme added momentum: For one, the auditorium is designed in an irregular fan shape that can easily be divided and reconfigured for different audience sizes, depending on the event. Second, the exterior curved walls are a broken "torus"; that is, two segments of hyperbolic forms (rather than semicircular arcs) generated from slightly different radii. Tschumi adopted this strategy to solve the problem of drawing crowds into the curved hall: At the point where one segment overlaps the other, he inserted the glassed-in main entrance.

In addition, one of the two arcs is slightly tilted, while the other

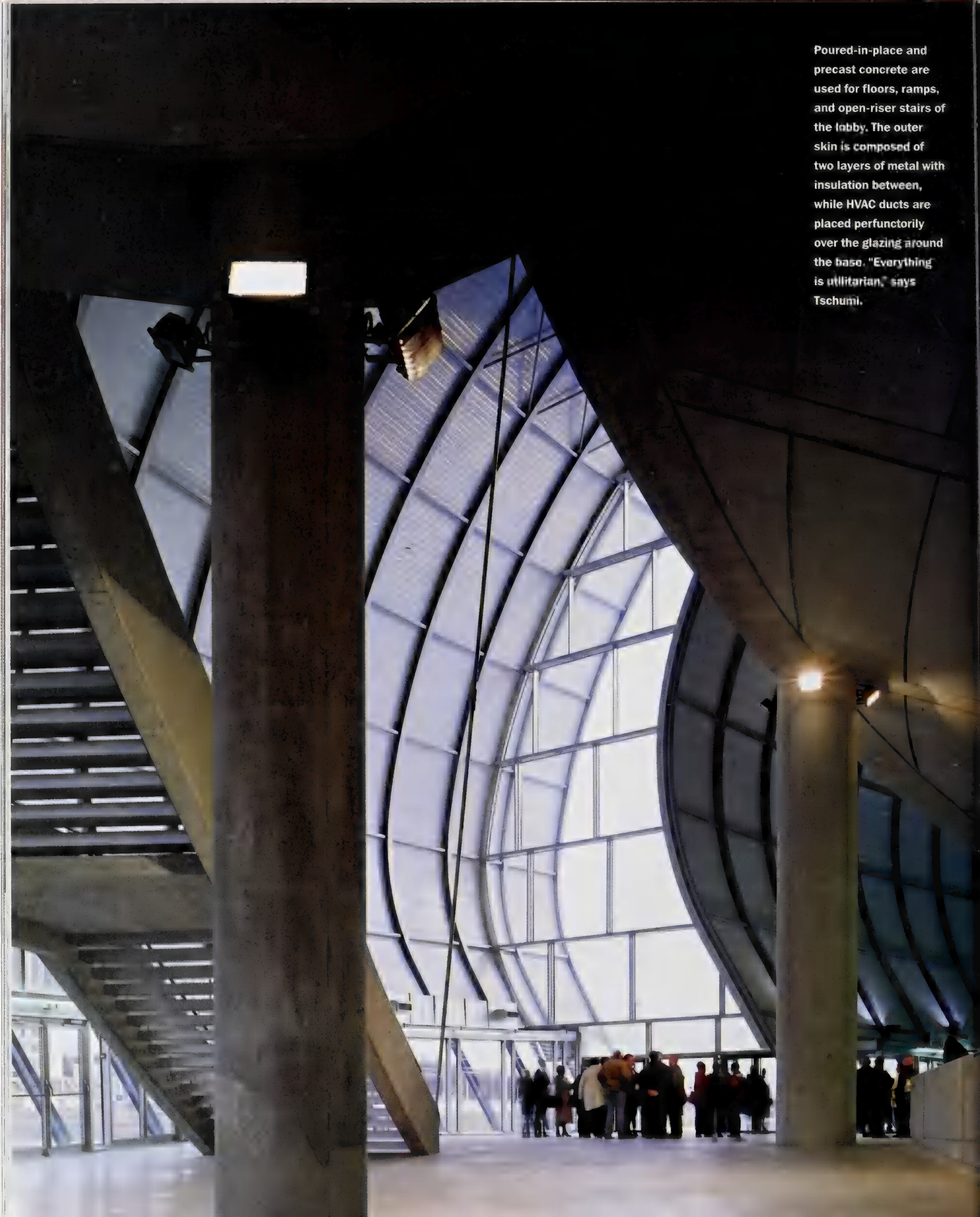
---

Project: *Zenith Concert Hall and Exhibition Complex, Rouen, France*
Architect: *Bernard Tschumi Architects—Bernard Tschumi, principal; Véronique Déscharrières, Alex Reid (Paris office); Kevin Collins, Joel Rutten (New York office)*
Owner: *District of Rouen*
Engineers: *Technip-TPS*
Consultants: *CIAL (acoustical)*
General contractor: *Quille*

PHOTOGRAPHY: © ROBERT CESAR/ARCHIPRESS (OVERLEAF); PETER MAUSS/ESTO (OPPOSITE AND ABOVE)

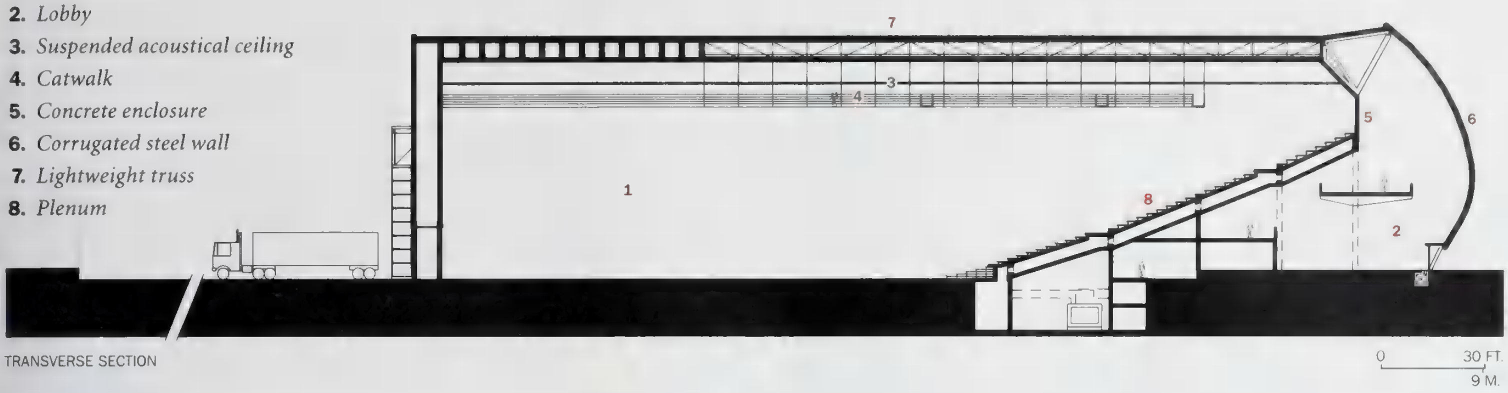


With the Rouen concert hall, Bernard Tschumi devised a scheme using a torus (a solid ring of circular or elliptical section) that is then broken (opposite). Where the two segments overlap, he inserted a glazed entrance (below).

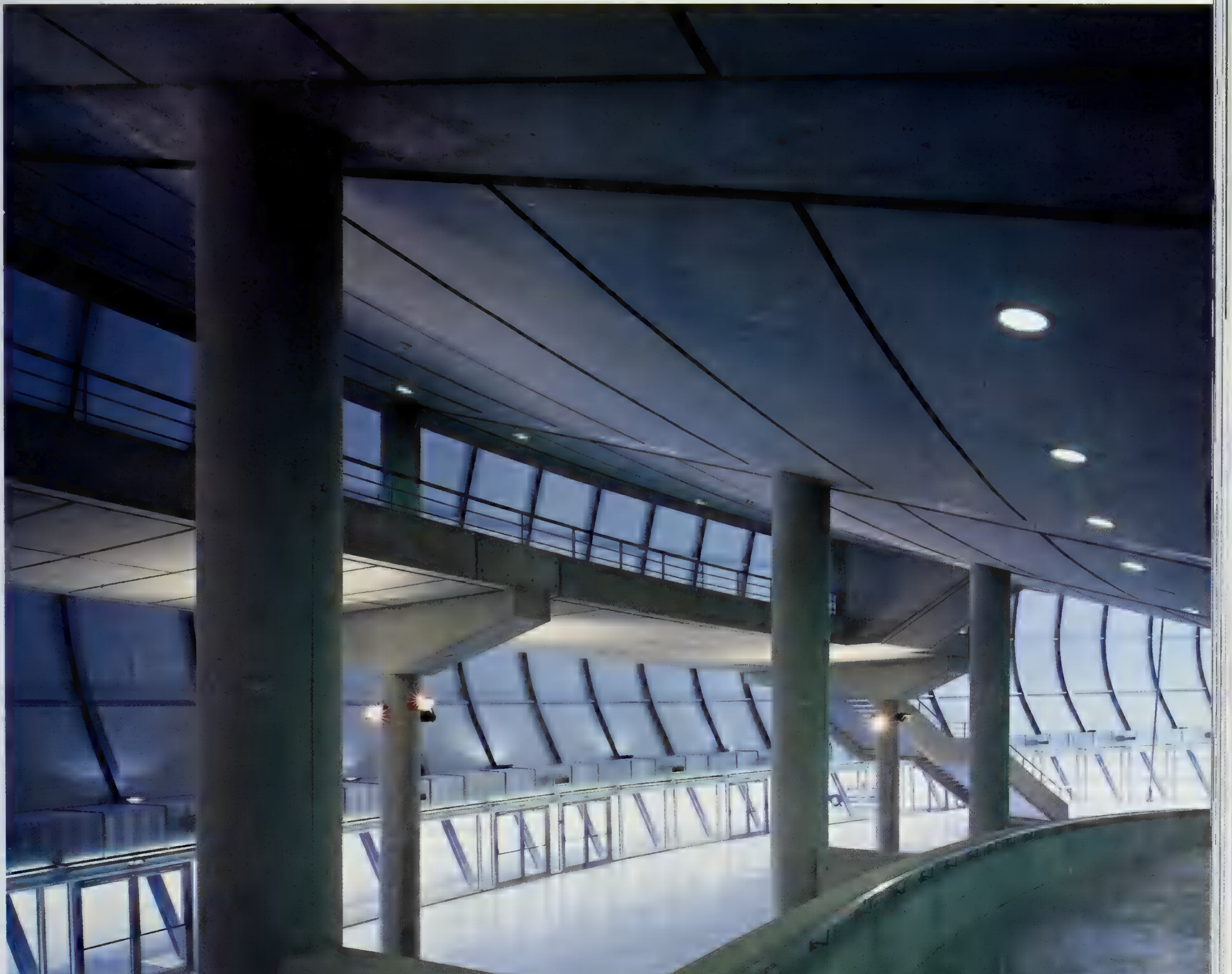


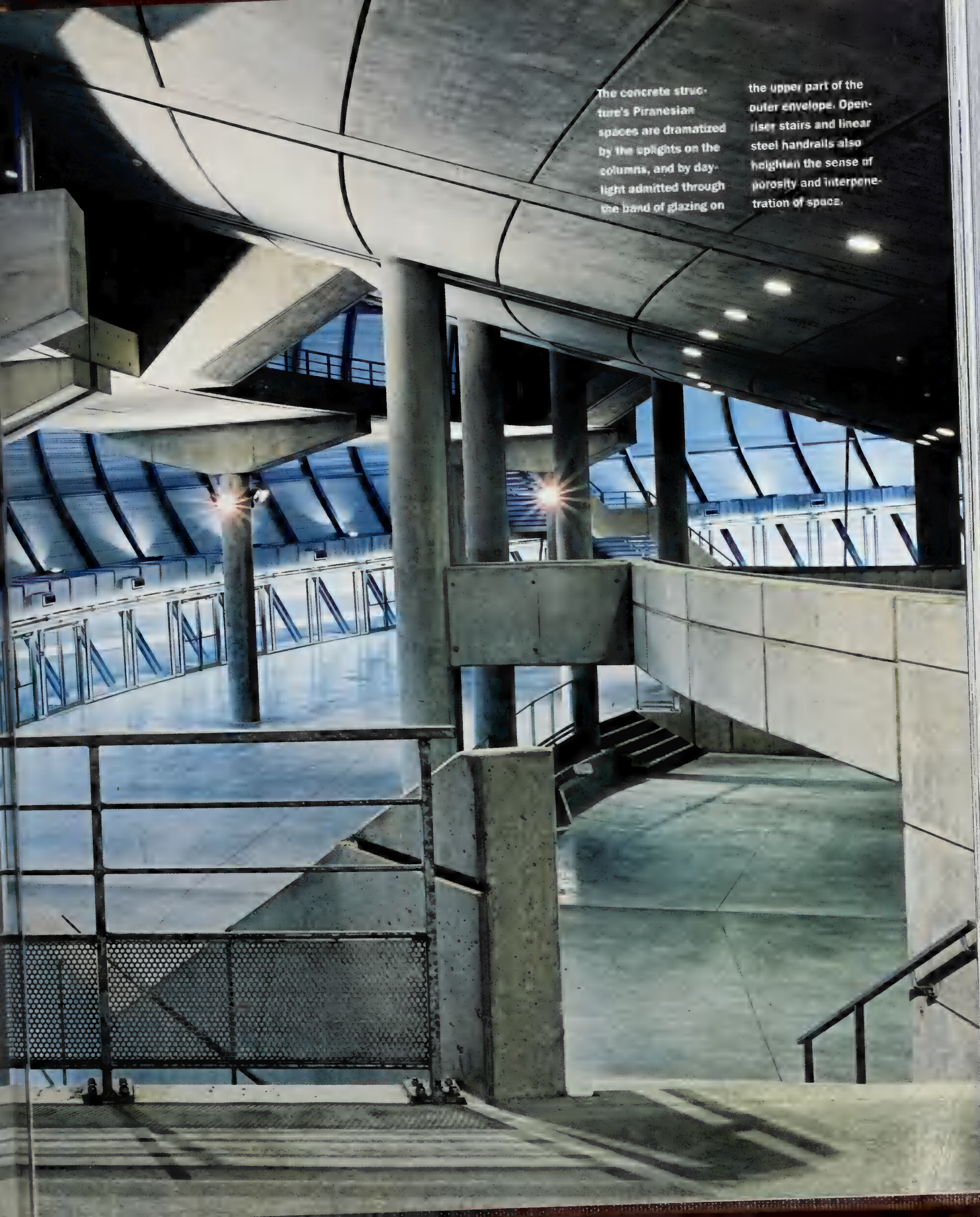
Poured-in-place and precast concrete are used for floors, ramps, and open-riser stairs of the lobby. The outer skin is composed of two layers of metal with insulation between, while HVAC ducts are placed perfunctorily over the glazing around the base. "Everything is utilitarian," says Tschumi.

1. *Auditorium*
2. *Lobby*
3. *Suspended acoustical ceiling*
4. *Catwalk*
5. *Concrete enclosure*
6. *Corrugated steel wall*
7. *Lightweight truss*
8. *Plenum*

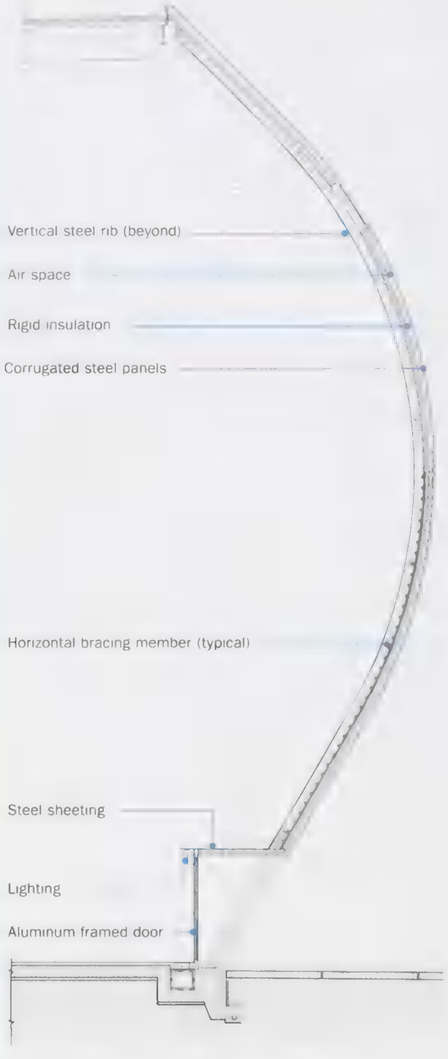


TRANSVERSE SECTION



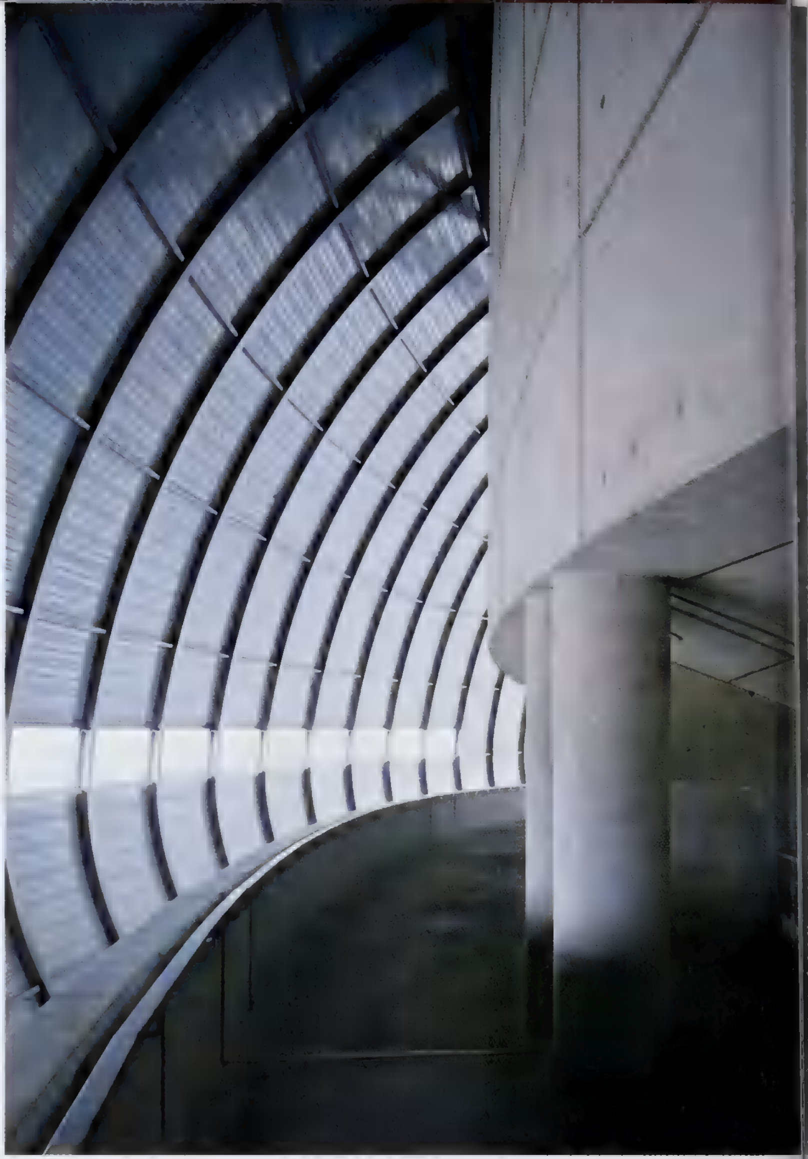


The concrete structure's Piranesian spaces are dramatized by the uplights on the columns, and by daylight admitted through the band of glazing on the upper part of the outer envelope. Open-riser stairs and linear steel handrails also heighten the sense of porosity and interpenetration of space.



SECTION THROUGH EXTERIOR WALL

The light exterior enclosing wall of corrugated steel is pierced with an upper band of fenestration and braced with curved ribs that continue to the ground (section, left).



is horizontal, to accommodate changes in topography without the need for a plinth. Since the curved form is glazed to a height of nine feet, it seems to hover above the earth, by all appearances resting on the slender steel ribs that extend to the ground. As in the Chartres proposal, three masts jut out of the horizontal roof, in this case 350 feet in diameter. The roof itself is composed of light metal trusses supported by the masts and suspension cables for 200-foot spans.

With its swirling ramps, open-riser stairs, and attenuated columns, the lobby combines the dynamic spaces of Piranesi with the tectonic concrete architecture of Auguste Perret. Indeed, the concrete, poured with the consistency of vanilla pudding, is a suitable homage to François Hennebique's innovations in reinforced concrete in the 1890s.

Adjoining the concert hall is a 700-foot-long Miesian exhibition space occupying most of a 1,000-foot-long bar jutting southward from the curvilinear hall. Defined by a crisp glass-and-aluminum curtain wall, its width, a clear span of 140 feet under a slightly arched truss, can flexibly house trade shows, antique fairs, and similar events.

Although the torus shape, made possible by complex computer calculations, brings to mind "blob"construction being explored by Greg Lynn and others [DECEMBER 1999, page 104, and NOVEMBER 2000, page 78], Tschumi's solution arguably emanates from a tectonic tradition. Building materials and techniques, plus complex geometry, determine the form. "I try not to rely on form over materials," says Tschumi, pointing out that computer-generated designs often ignore the importance of the latter. Not surprisingly, the spirit of earlier Modernist architects, especially Tschumi's favorites, such as Paul Nelson and Oscar Nitzchke (who worked together on a cable-supported, concrete Palace of Discovery project in 1938), as well as the expressionist Frederick Kiesler, seems to float over this realized scheme.

Tschumi's recognized preference for creating unprogrammed spaces where "flows and vectors intersect," and his desire to create "event" architecture, where the movement of people bring life to the void, are also in evidence. Ironically, the shiny skin and sculptural bones almost steal the show from the spaces in between. To be sure, the kinesthetic experience of moving into and through the building is dynamic. But this is also a place where you can just stand still and admire the craft of construction of the object, as well as the space inside. ■

Sources

Structural system: *SMB (metal); QUILLE (concrete)*
Masonry: *QUILLE*
Metal/glass curtain wall: *SMB and Julien*
Built-up roofing: *Spada*
Metal roofing: *Etanchisa*
Steel windows: *Rineau*
Glazing: *Pilkington; St. Gobain*
Fixed seating: *Grofilex (Siège BTA-Modèle Déposé)*
Lighting: *Szen-S3en*
Suspension grid: *Scènetec*

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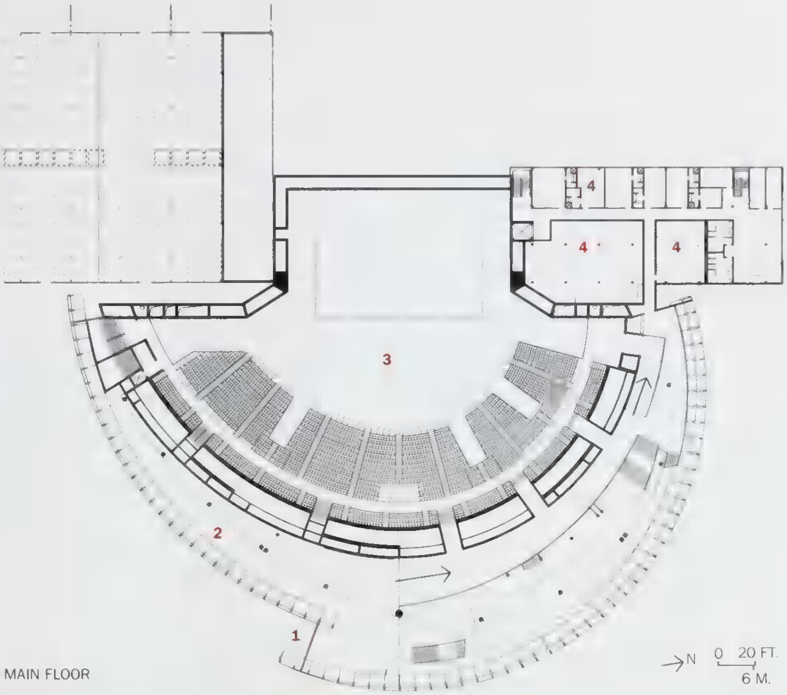
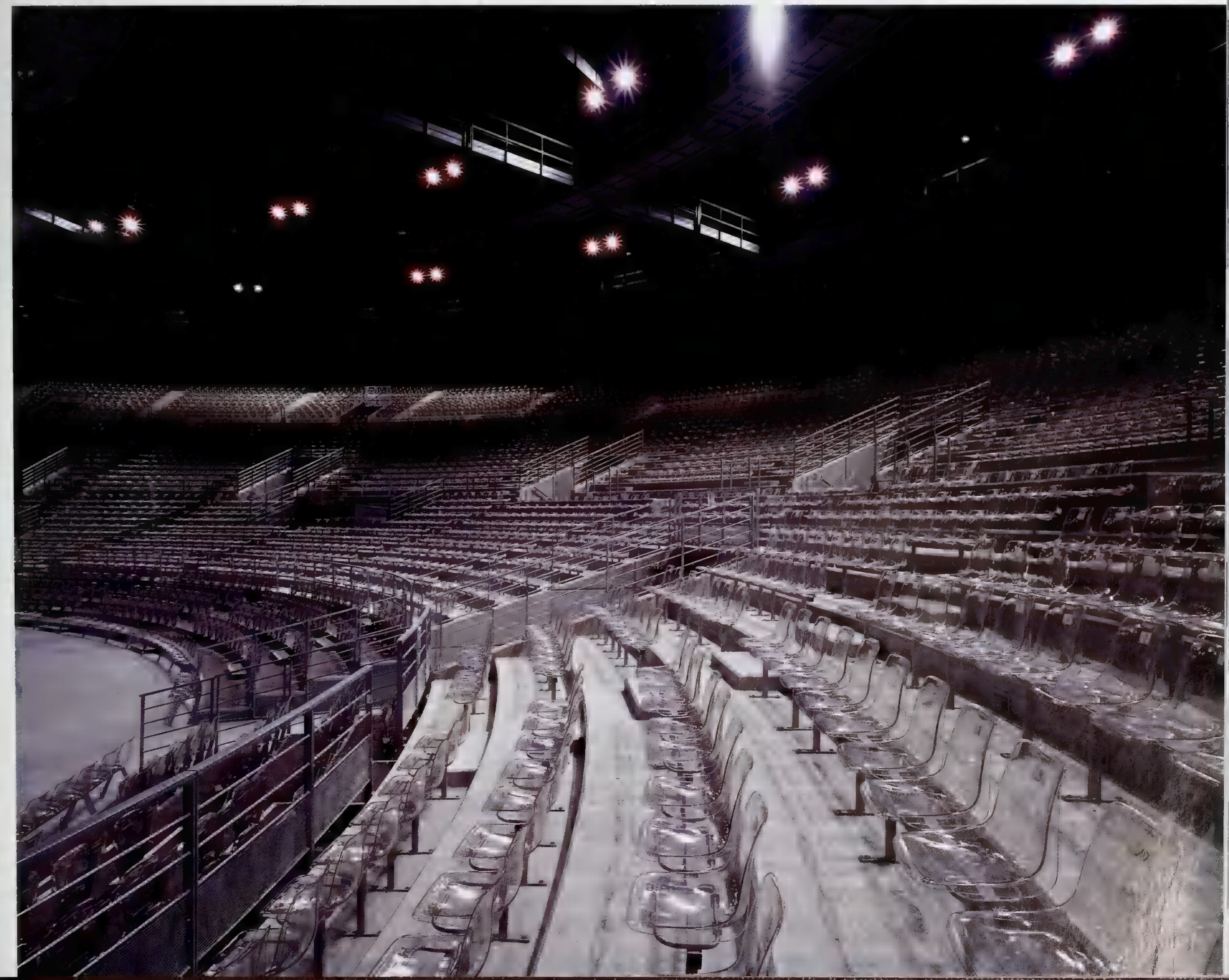
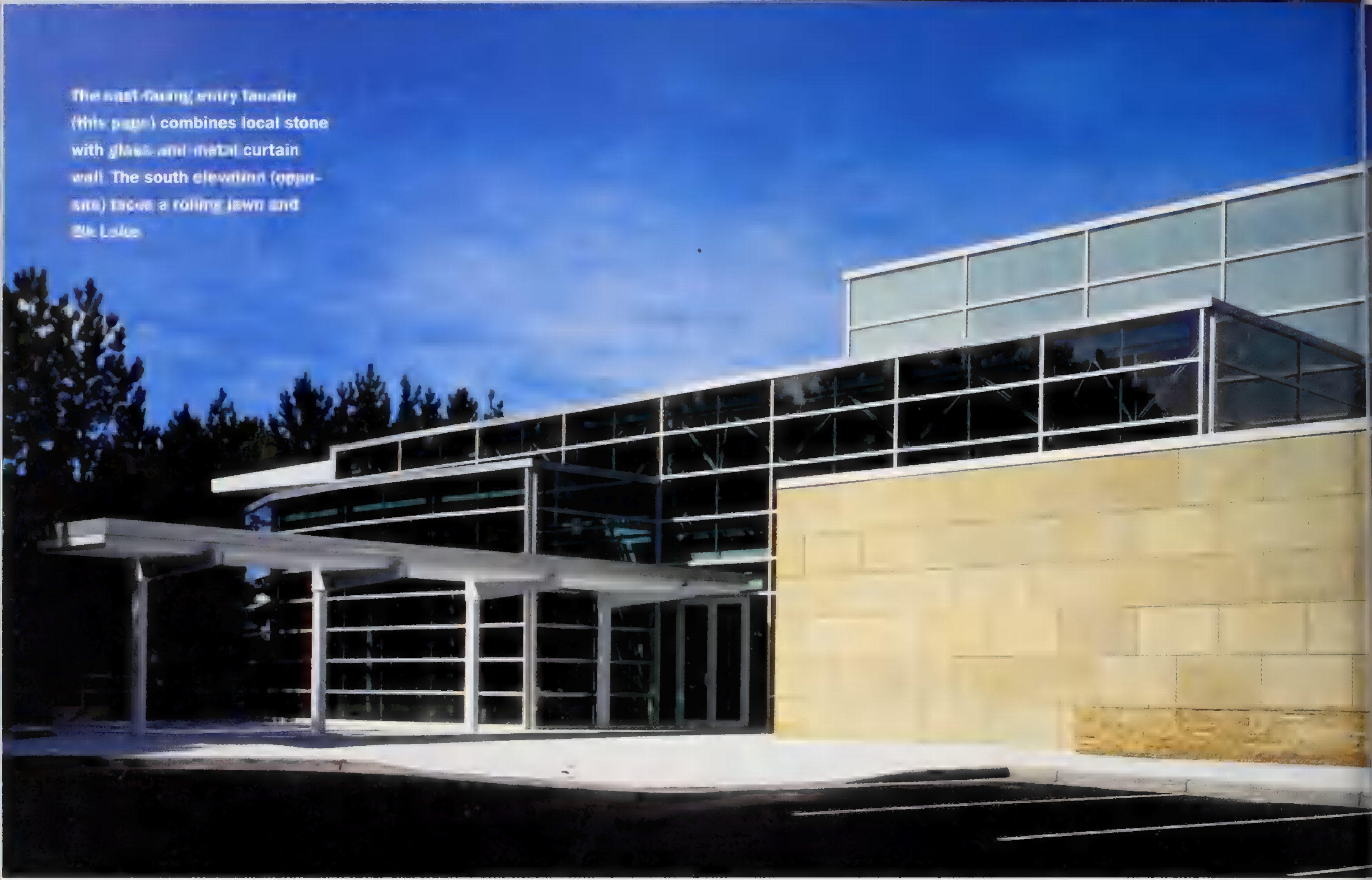
The auditorium is designed so that spaces may be closed off, depending on the various entertainment or political functions taking place. The front section of the transparent, acrylic plastic, folding seating is movable, and a plenum below the floor delivers air through the seating areas.

1. *Entrance*
2. *Lobby*
3. *Auditorium*
4. *Backstage rooms*





The east-facing entry facade (this page) combines local stone with glass-and-metal curtain wall. The south elevation (opposite) faces a rolling lawn and Elk Lake.



Krueck & **Sexton** translates a company's progressive philosophy into modern architecture at the **PHILLIPS PLASTICS FACTORY** in Wisconsin

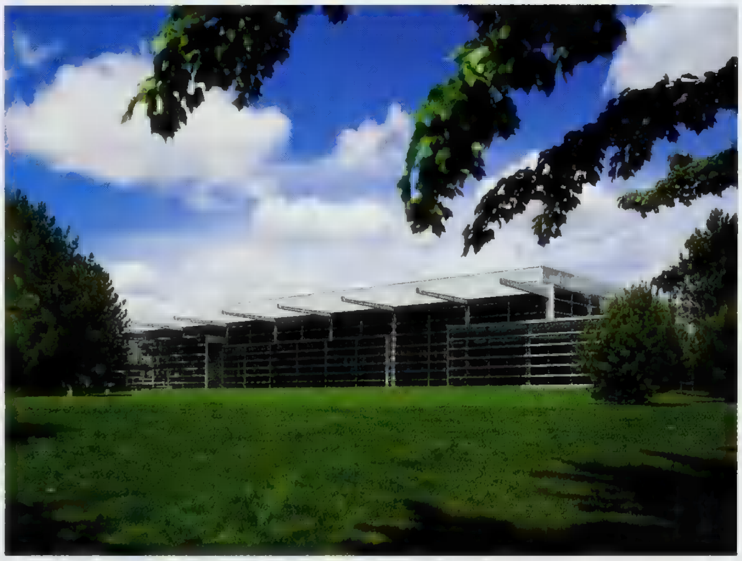
By Clifford A. Pearson

When modern architects dream, they often see a machine sitting in a garden. Precise, rational, and repetitive, the machine is the perfect foil to the irregular, ever-changing elements of nature. The contrasting-yet-complementary characters of machine and garden are locked in a powerful embrace that has fascinated architects since Joseph Paxton's Crystal Palace captured flora under glass in 1850 London.

The dream lives on in Krueck & Sexton's design for Phillips Plastics Custom Molding Facility in Phillips, Wis.: an 85,000-square-foot factory on a wooded property near the confluence of Elk River and Elk Lake. The building, which was carefully sited to minimize tree removal, engages its surroundings with great walls of clear glass that bring views of the rural landscape to all employees. As it has done with many of its other facilities, such as its Short Run Factory, designed by James/Snow Architects [FEBRUARY 1992, page 102], Phillips demanded architecture that treats blue-collar and white-collar employees as equals. In the company's nonhierarchical organization, access to daylight, views, and amenities is shared equally.

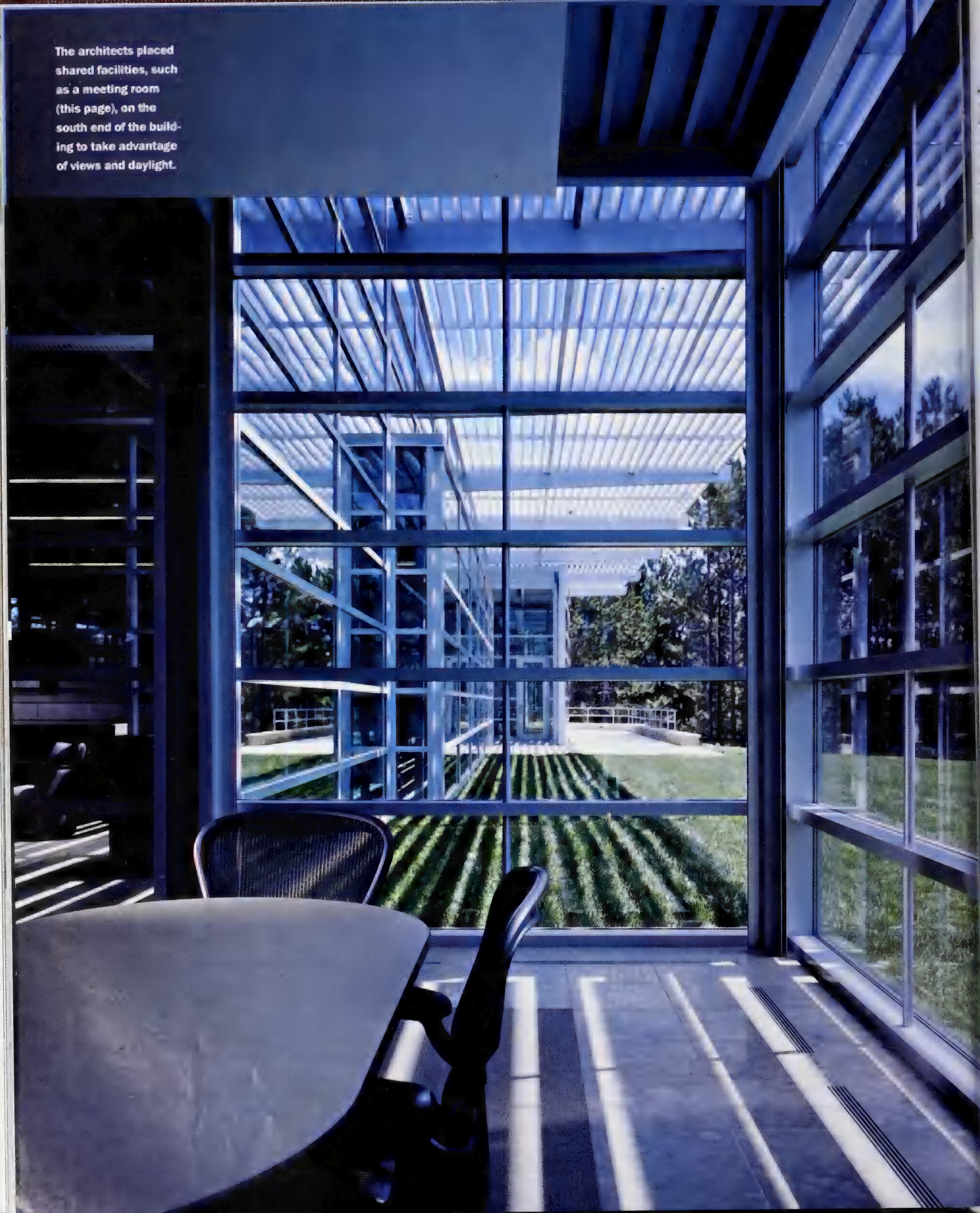
"The foundation of our business is to facilitate people working together," states Robert Cervenka, chairman of the board of Phillips Plastics. "This gives us a competitive advantage," he says, by making employees more productive. Architecture plays a part in this strategy. "If you want people to work together, you need to give them a building that encourages cooperation," explains Cervenka. An open work environment, for example, encourages employees to work as a team. Small factories—no more than 320 employees per plant—help people identify with their workplace. The results have been impressive for Phillips. Over the past 36 years, the company has reaped a return-on-equity of 17.4 percent per year, in part due to very low employee turnover (just 2 to 6 percent each year, compared with 5 to 15 percent for most of its competitors), notes Cervenka.

The great majority of the 220-250 employees at the Custom Molding Facility work on the manufacturing side of the business, producing parts for the automotive, telecommunications, and medical-device industries. As a result, the building's largest component is the 220-foot-long, 130-foot-wide, 35-foot-high manufacturing shed, a glass-clad volume housing twin gantry cranes that facilitate quick reconfiguration of the factory's three production lines.

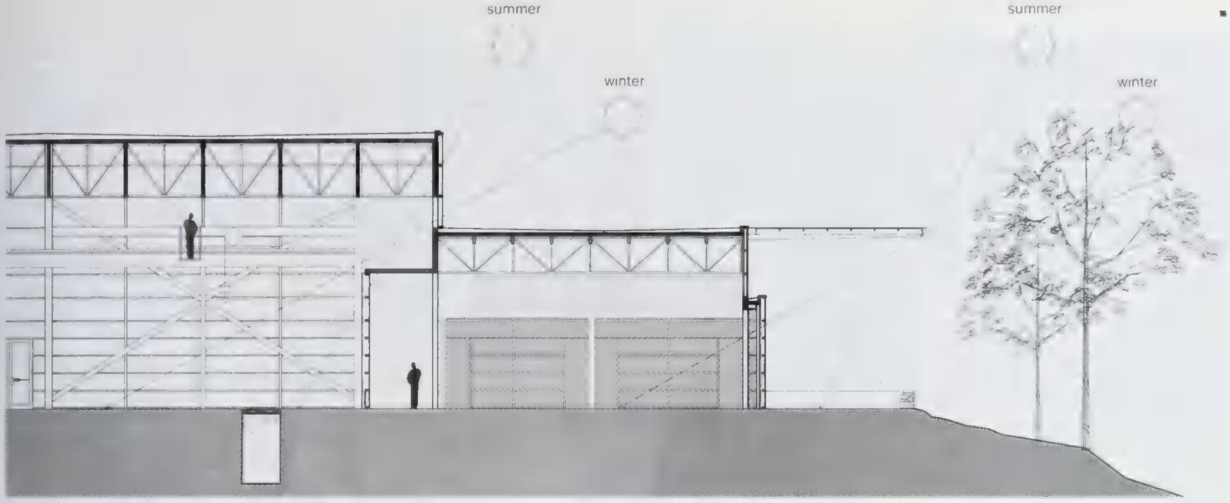


One of the problems with many factories today is that the usually small office portion seems like a pimple on the face of the manufacturing hall, says Mark Sexton, AIA, project principal for the Phillips job. To avoid that problem, the architects combined offices and shared amenities such as a lounge, reception area, and meeting rooms and spread them out along the south side of the building, facing views of the lake and river. And to reduce the apparent bulk of the production hall, they wrapped a storage-and-loading block on its north side and used a variety of exterior materials, including fritted glass, a local stone called Mankato-Kasota, and pre-engineered, insulated-aluminum panels. The result is a building in which blocks of different materials seem to slip past one another—emphasizing a dynamic ensemble, not any one piece. "We wanted to dissolve the usual distinction between manufacturing and offices," says Sexton. A similar kind of seamlessness holds sway inside the building, where only an acoustically rated glass wall separates the factory's production lines from the administrative area's work cubicles. "If it weren't

Project: *Custom Molding Facility, Phillips, Wis.*
Owner: *Phillips Plastics Corporation*
Architect: *Krueck & Sexton Architects—Ron Krueck, FAIA, design principal; Mark Sexton, AIA, project principal; Tim Tracey, Assoc. AIA, project architect; Tom Jacobs, architect*
Associate architect: *Rick Fisher, AIA, Architects Engineers Construction Managers, LLC*
Engineer: *Larson Engineering of Wisconsin*
General contractor: *Oscar J. Boldt Construction—Jerry Feith, architect/project manager; Doug Haas, AIA, architect of record; Pete Kuehl, AIA, architect*

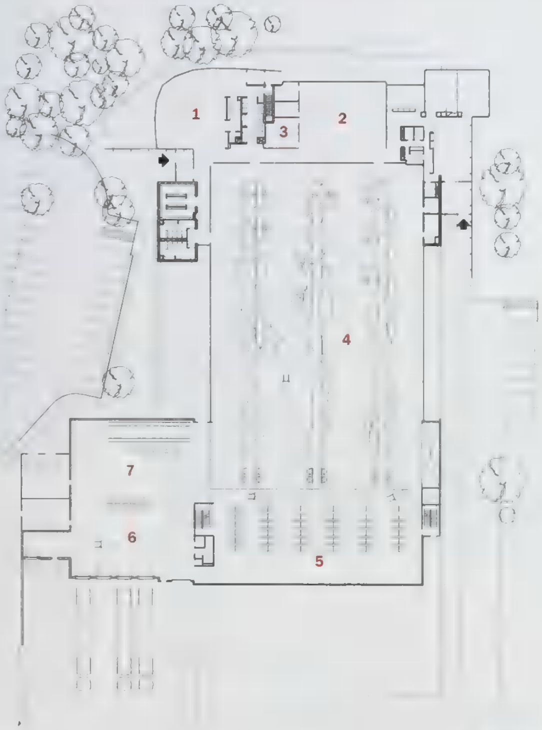


The architects placed shared facilities, such as a meeting room (this page), on the south end of the building to take advantage of views and daylight.



WINTER/SUMMER DAYLIGHTING

Because the factory is in northern latitudes, bringing daylight inside was important. Clerestory windows and curtain wall on the south elevation let the winter sun inside (drawing, above left), while a deeply projecting canopy (below) reduces the impact of summer light on shared spaces, such as the dining lounge (below left).



1. *Lounge*
2. *Offices*
3. *Conference*
4. *Production*
5. *Storage*
6. *Shipping/receiving*
7. *Maintenance*

MAIN FLOOR

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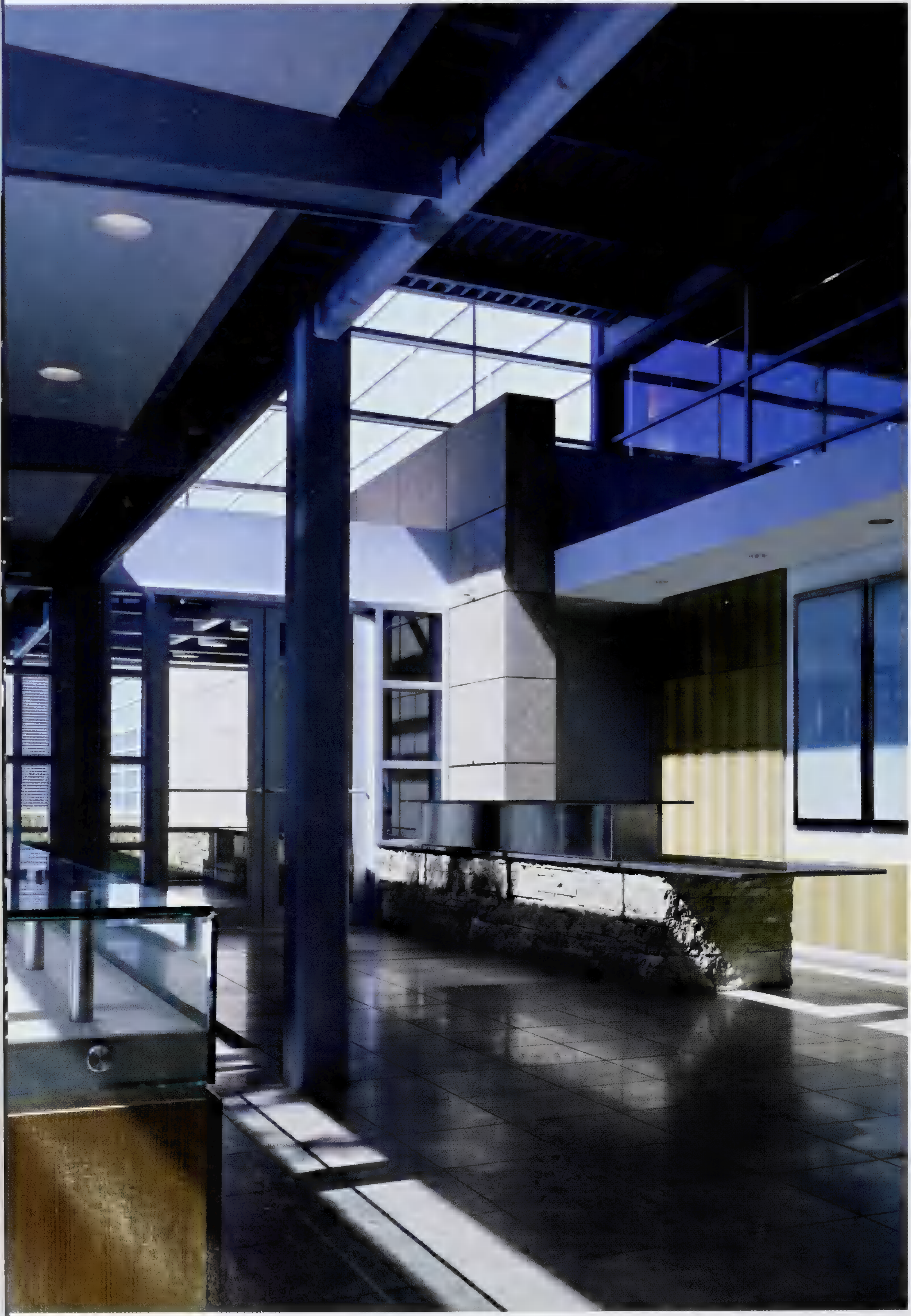

A sense of openness and equal access is maintained throughout the building—from the entry lobby (left) to the manufacturing hall. Only an acoustically rated glass wall separates the production area from office space (opposite, left). At night the factory glows like a beacon (opposite, right).

for the noise, we wouldn't have anything separating the two parts of our business," says Cervenka.

Steel-frame roof trusses, which are six feet deep, handle the 130-foot-long spans of the factory hall. (The depth was needed, in part, to support the weight of Wisconsin's heavy winter snows.)

Designing for a location where the sun is often a precious commodity, the architects paid particular attention to daylighting. Clerestory windows around much of the building let in winter light, while a deeply projecting, metal-slatted canopy on the south facade shades interiors from the sun during summer months. Glass above 12 feet off the ground has an 85 percent white-ceramic frit to reduce glare and heat, while glazing below has a 50 percent frit. (Although the 50 percent frit doesn't help much with the sun, it maintains a uniform look for the glazing.) Workers say they get some glare on computer screens on sunny days, but they feel this is a reasonable trade-off for the glorious views, relates Sexton. Thanks to all the heavy equipment operating on the factory floor, heating this glass box is not a problem, even in winter. In fact, the building takes the heat generated by the plastics presses and circulates it to other parts of the facility.

WE WANTED TO DISSOLVE THE USUAL DISTINCTION BETWEEN MANUFACTURING AND OFFICES, SAYS SEXTON.

Instead of the usual design-bid-build process, the client asked the architect to work with the contractor as a design-build venture. Krueck & Sexton had never worked this way and was initially wary. But Cervenka likes design-build because it leverages long-term relationships with suppliers, rather than relying on low bidders. "We've tried bidding out projects in the past and we weren't happy with the results," states Cervenka. "If you focus on quality rather than initial price, you find that long-terms costs are lower." In the end, the architects at Krueck & Sexton were won over as well. "We feared we'd get creamed and our voice wouldn't be heard," recalls Sexton. "But working with Boldt [Construction Company] was great. They were open to new ideas, and the process allowed construction concerns to be dealt with in the design process. Now we're looking for new opportunities to work with Boldt."

Mention factories and most people think of noisy buildings in industrial parks or aging boroughs of big cities. Phillips' custom molding facility is a different kind of place. By connecting the worker on the production line to views and spaces outdoors, the building makes real the idealized image of a machine in a garden. ■

Sources

Stone cladding: *Mankato Kasota Stone, Inc.*

Anodized aluminum curtain wall: *Curtainwall Systems*

Metal panel system: *Benchmark (Design Wall Series 2000)*

Clear low-E insulated glass: *Custom Glass Products*

Ceramic-frit low-E glass: *Goldray*

Cabinetwork: *DeLeers Woodworking*

Bleu gris honed stone floor tile: *Stone Design Inc.*

Carpeting: *Interface*

Office system furniture: *Knoll*

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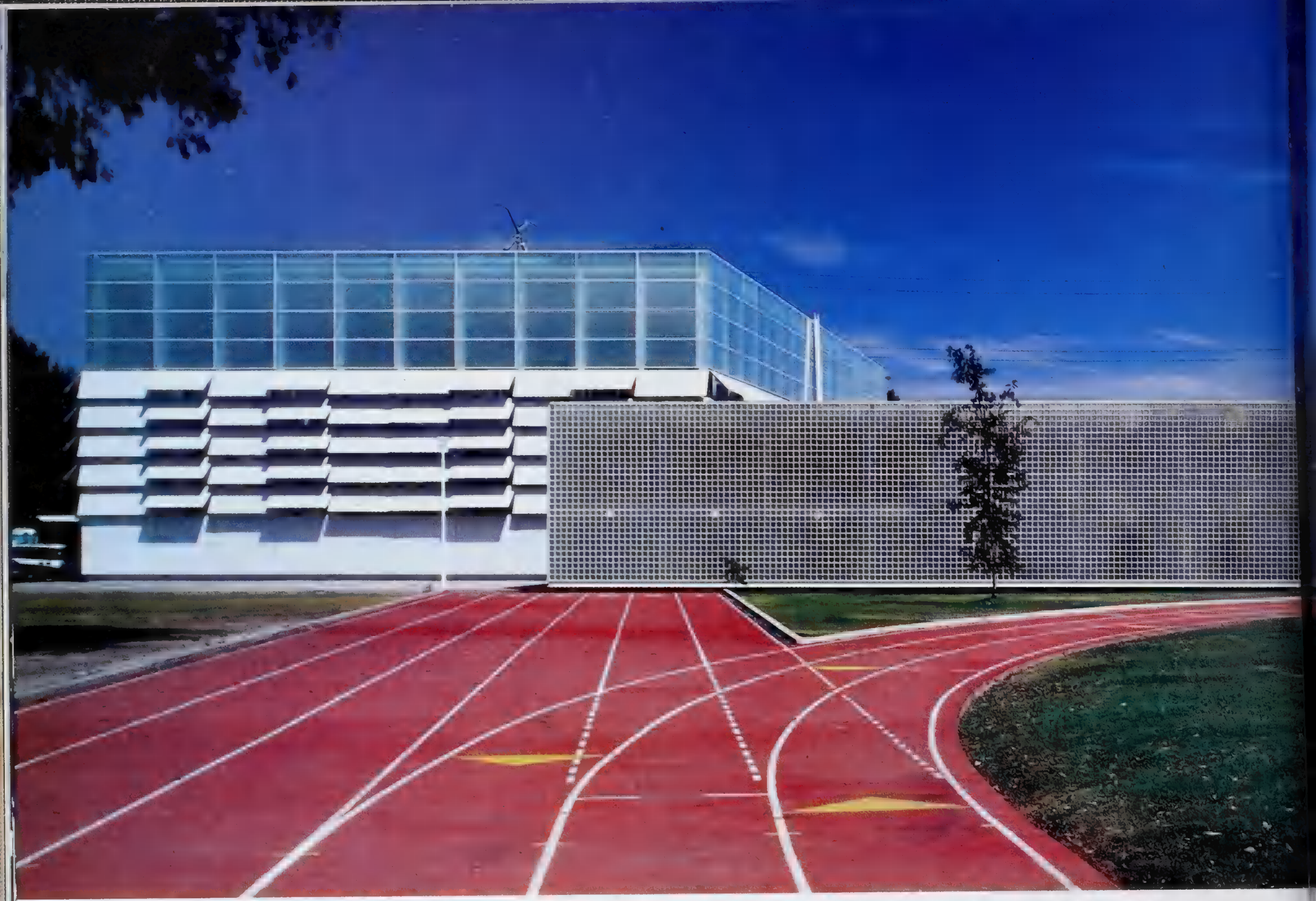
At night, the gym's clerestory is set aglow, and rhythmic lighting animates the glass-block-and-concrete building that houses changing, sauna, and weight rooms (inset). At the pool, low lights in the surrounding stone walls play against the lanternlike gym with its projecting aerobics room (this spread).

At the Educare school in Mexico, TEN **Arquitectos'** **NEW GYMNASIUM** opens and closes its fishlike gills in response to wind, heat, and rain



PHOTOGRAPHY: © JAIME NAVARRO

By Sarah Amelar

The building's shell was envisioned like the scales of a fish or the feathers of a bird," says architect Enrique Norten of the Educare school gymnasium he designed. "Changing and reacting to weather conditions, the structure is like a live animal—it can really breathe."

The analogy to a living creature appears, at first glance, more abstract than literal. The gym is a pure and rational geometric solid: a simple gridded volume, clad in white enameled-steel panels rising to bands of translucent glazing. But the exterior, especially its opaque zones, is transformed as temperature, humidity, rainfall, and winds shift, prompting the facade's top-hinged, sensor-controlled panels to spring open. Sometimes, a few enameled panels lift barely a crack; other times, nearly every rectangle in the mid-registers swings upward, forming great, gaping parallel louvers.

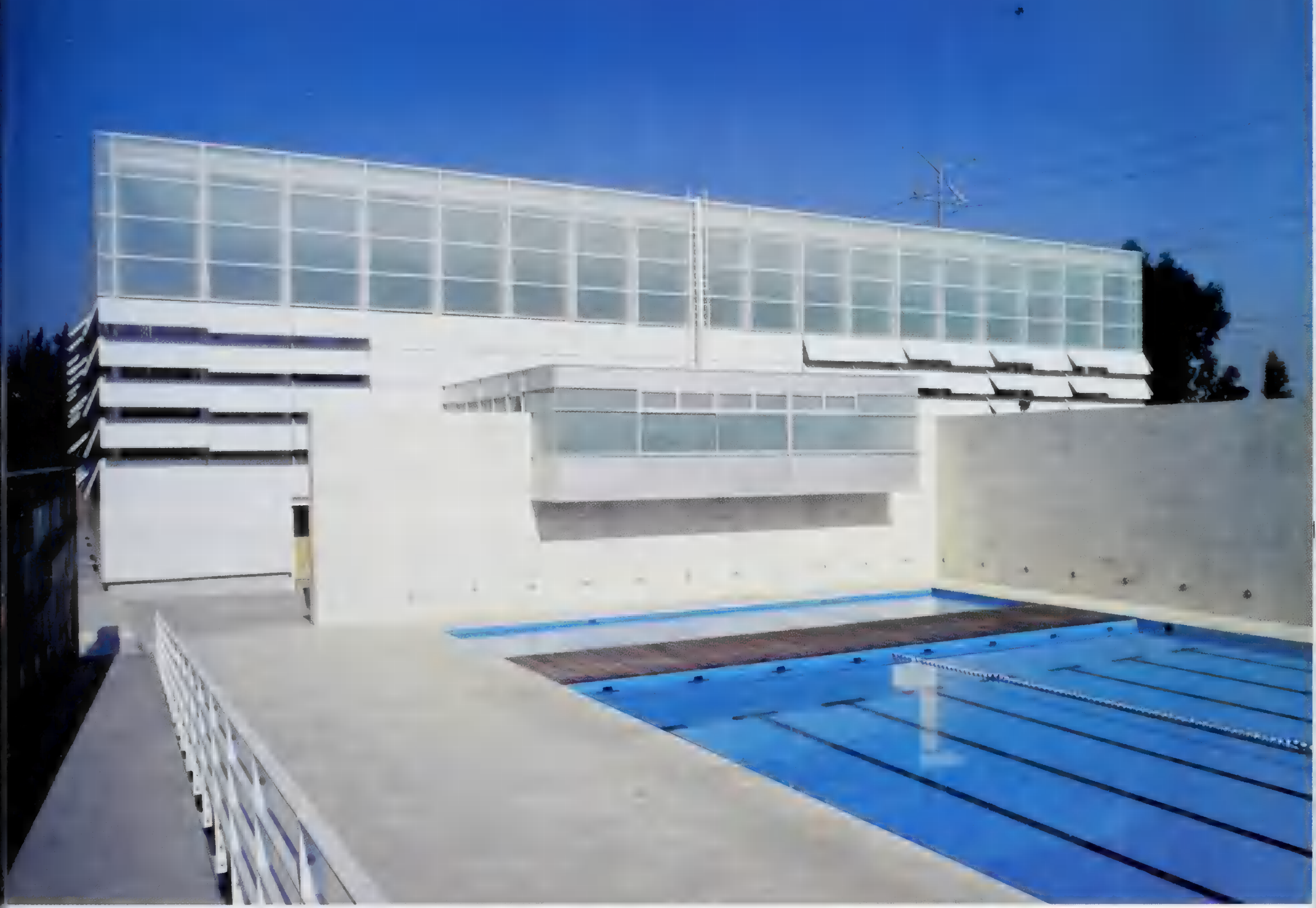
Though sited in Guadalajara, Mexico, this permeable gymnasium requires no air conditioning, ushering in breezes even through the hottest stretches of summer. And during a typical day, sunlight filtering through the clerestory provides the sole source of illumination.

"This is sustainable architecture," says Norten, "but it's an intentional counterstatement to the 'sustainable' buildings around it." Indeed, the entire sports complex, designed by his firm, Mexico City-based TEN Arquitectos, is clearly a species distinct from its neighbors. Here, quaint reddish adobe structures—built only three years before the new gym—dominate the surrounding 18-acre campus of the kindergarten-to-college Educare school. A walled enclave, the cluster of buildings imitates traditional Mexican villages. In Norten's view, its romanticized imagery outweighs ecological features, offering what he dubs "nostalgic sustainability."

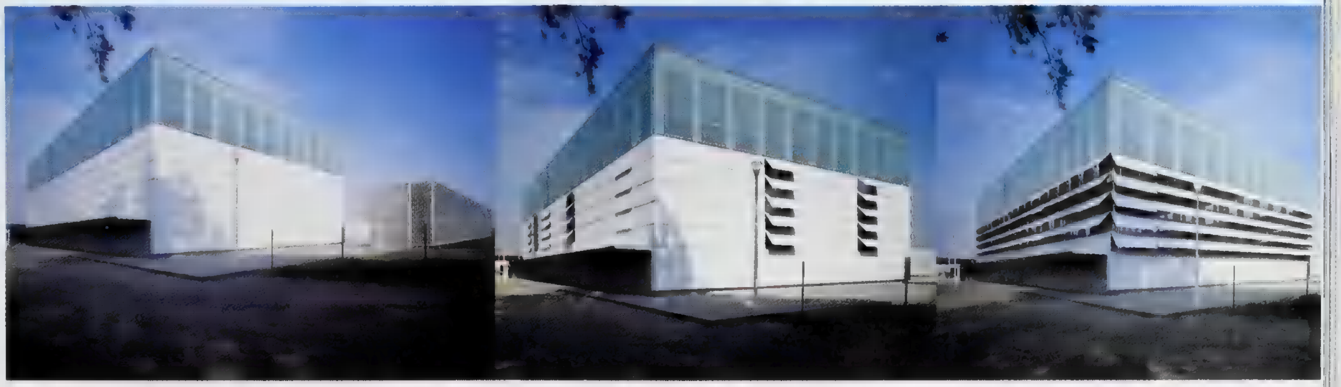
By contrast, his design—the "breathing" 12,000-square-foot gymnasium with an outdoor pool and a separate glassblock-and-concrete building with changing rooms—shuns earthy, homespun references. With a more hard-edged Modernism, typical of TEN's work, the athletic complex draws on the assets of climate and site conditions. Not only does the gym save energy by responding to weather, but its pool is a model of adaptive reuse—the reincarnation of an existing agricultural cistern.

The sports facility took Educare's campus design in a radical new direction—and, at the same time, presaged the greater architectural awakening of its client, Jorge Vergara, now 46. A legendary businessman, Vergara had launched his own meteoric rise from a vendor of fried pork to a nutritional-supplement magnate. (His company, Omnilife, caters to Mexican tastes by marketing vitamin-packed chewing gum, cola, and coffee, rather than less-appetizing pills and powders.) Hoping, he says, to

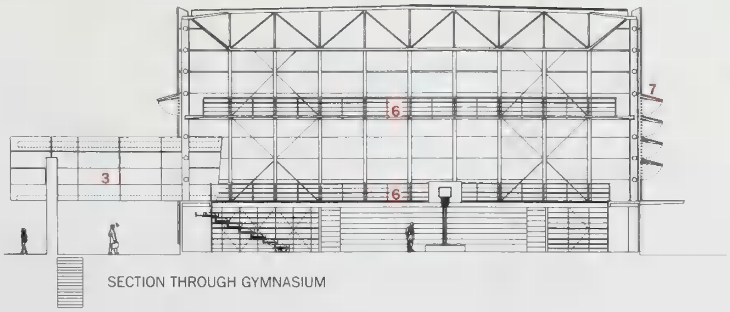
Project: *Sports Facilities, Educare School, Zapopan, Jalisco, Mexico*
Architect: *Ten Arquitectos—Enrique Norten, Hon. FAIA, and Bernardo Gómez-Pimienta, principals; Carlos López, Jorge Arvizu, Rubén Garnica, Hugo Sánchez, project team*
Engineer: *Colinas de Buen*
General contractor: *Corey Integra, Ing. José Ibarra*



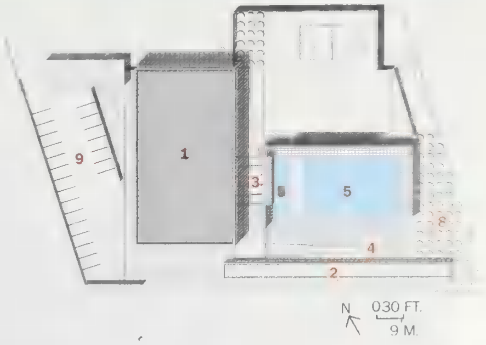
Approached from the south (opposite), the gymnasium and lower glassblock-and-concrete building conceal the courtyard. East of the gym, the court and swimming pool reveal themselves (above). The gym's facades open and close with changing weather (right).

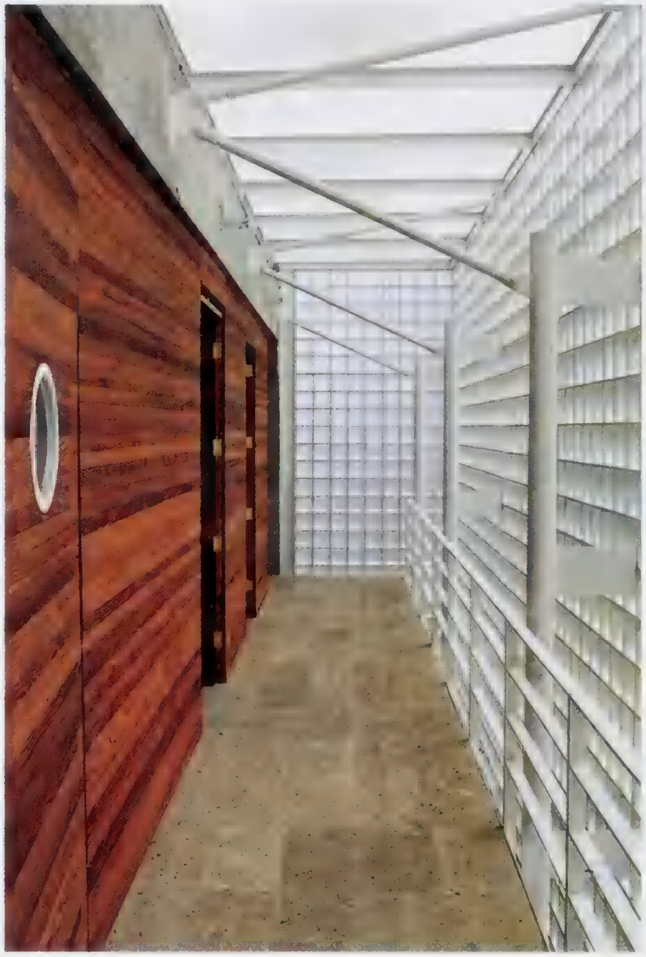


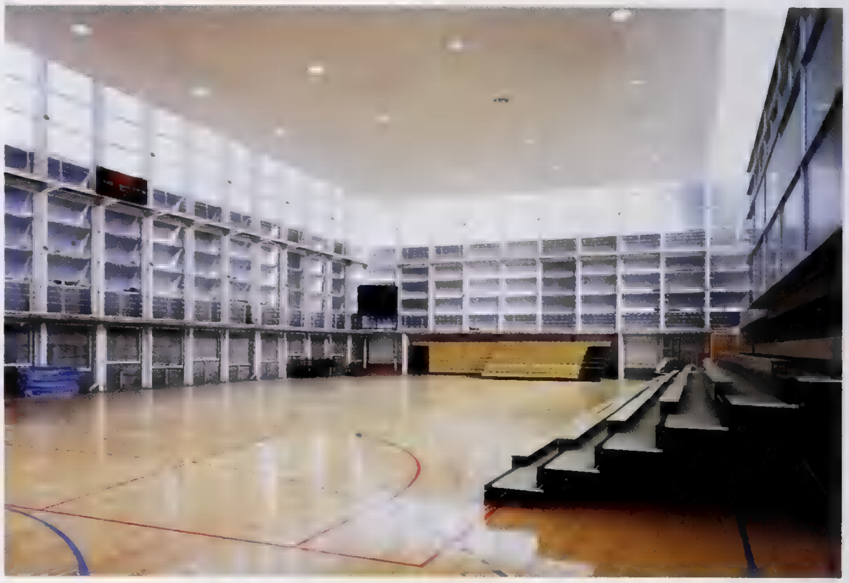
1. *Gymnasium*
2. *Dressing rooms*
3. *Aerobics*
4. *Ramp*
5. *Swimming pool*
6. *Catwalk: maintenance/lighting*
7. *Operable panels*
8. *Lemon grove*
9. *Parking*

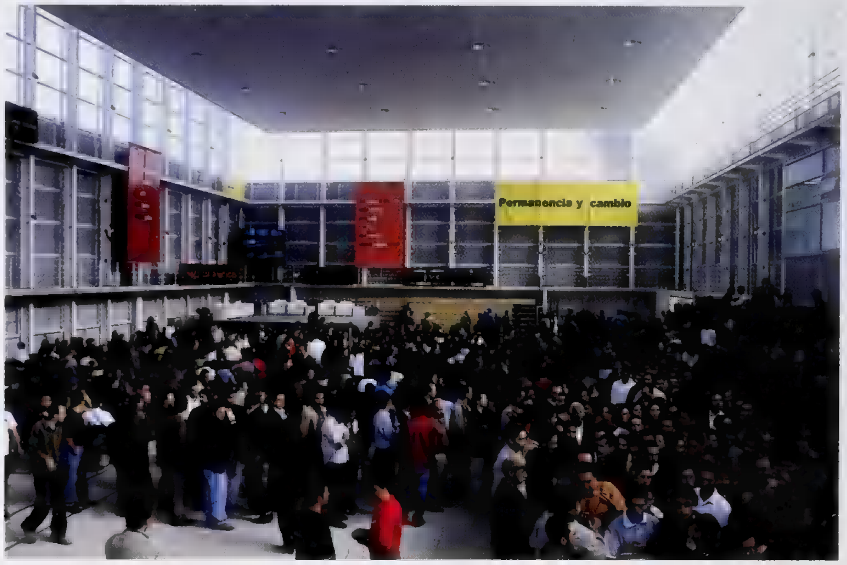


SECTION THROUGH GYMNASIUM









Just as the gym's skin changes, many components of the complex offer programmatic flexibility: Redwood-clad saunas (above) are suitable for a weekend health club, which may open at the facility. The gym (right) can be converted for ceremonies and other events.

spur improvement in Mexico's educational system, he ventured beyond Omnilife and founded Educare in 1996. A state-of-the-art private school, it emphasizes individual talents and growth.

As Vergara was establishing the school, he set out to erect a venue for his distributors' motivational meetings. But the scope of that project expanded—and with it, his enthusiasm for cutting-edge architecture. What began as a convention hall became—with guidance from TEN Arquitectos—Guadalajara's yet-unbuilt JVC Center, a compound with fair grounds, a hotel, entertainment complex, museum, stadium, and more by such star architects as Morphosis, Toyo Ito, Daniel Libeskind, Jean Nouvel, Zaha Hadid, and Coop Himmelblau (see "JVC Center" [JUNE 1999, page 120] and Record News [MARCH 2001, page 27]).

Accordingly, Educare's sports facility favors clean, simple forms, which TEN sited to articulate outdoor space. An 82-foot swimming pool occupies a courtyard defined by freestanding walls and pavers of creamy conchuela stone. On one side of the court stands the gym and, perpendicular to it, a lower horizontal building. These forms seem to slide past one another, never fully enclosing the court, allowing a continuous flow of space. A ramp against a wall of black volcanic rock runs along the court elevation of the lower building, which houses the sauna and weight rooms, along with locker areas. Its opposite face is an uninterrupted 190-foot-long wall of glass block, supported by a separate steel structure: Pulled back within the building, it joins the exterior wall at only a few key places. Straightforward in structure, the gym has steel I-columns supporting its roof, elevations, and interior maintenance catwalks. Its ceiling, hung from a light truss beneath the clerestory, doesn't meet the walls—achieving an ethereal, floating effect. From the exterior, the glassy clerestory allows the top of the gym's blocky form to dematerialize visually.

The complex's palette—silvery steel, blue-green glass, and creamy stone—is luminous though muted (except for the aqua pool, a color not selected by the architects). All the materials come from Mexico, including the conchuela, which has the smooth, pale golden quality of limestone but is laced with small seashell fossils that reduce slippery surfaces.

In season, the fragrance of lemon blossoms will drift over the pool and into the gym, making it an idyllic and luxuriant place to shoot baskets. The building really can breathe on its own (or alternatively, the panels have push-button controls to override the sensors). Of course, such a living creature would not thrive very far from balmy Mexico—a place where outdoor paths can often serve as well as indoor corridors. ■

Sources

Enameled steel: *Alpher*
Steel structure: *Corey*
Showerheads: *Helvex*

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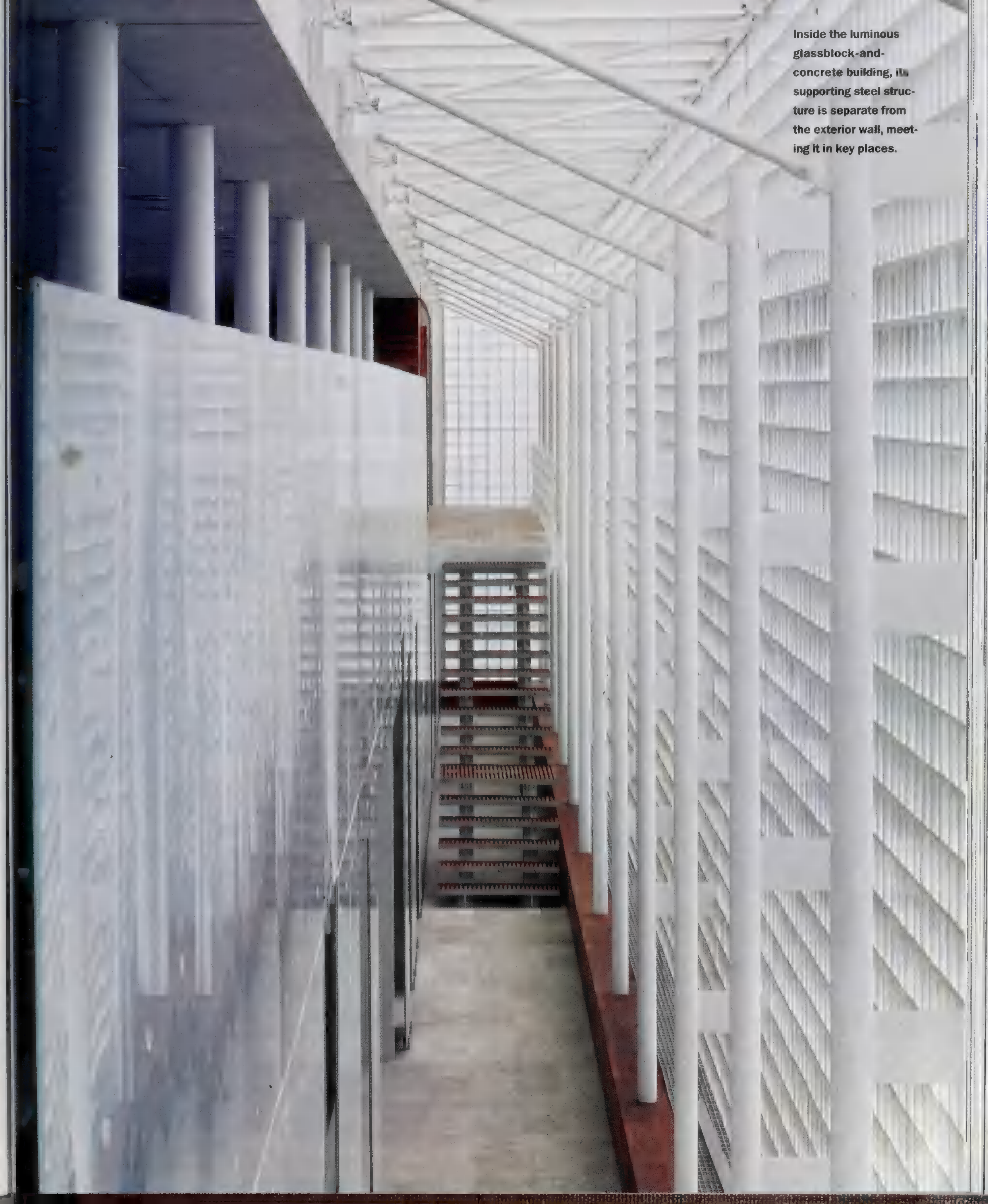
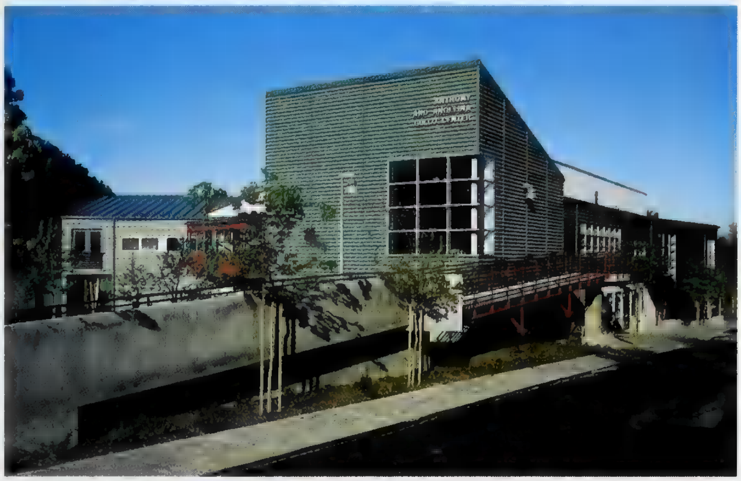
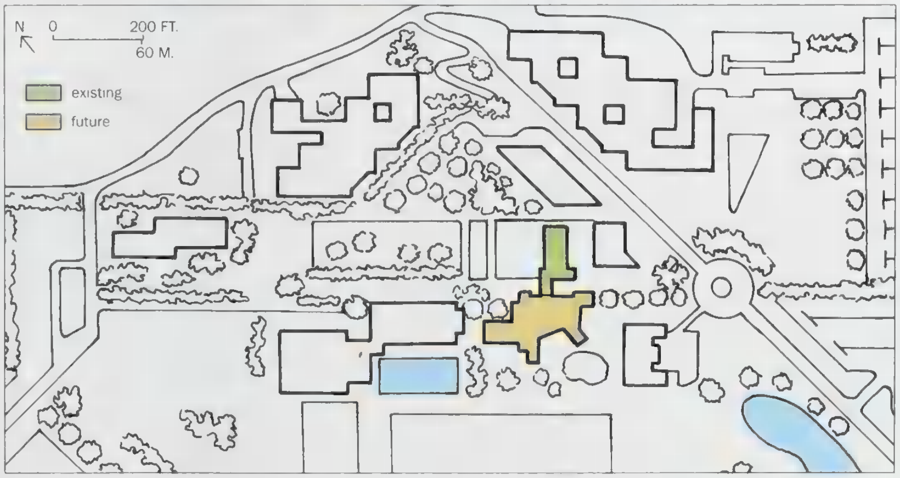


Inside the luminous glassblock-and-concrete building, its supporting steel structure is separate from the exterior wall, meeting it in key places.

The centrally located student center creates a sense of destination and arrival with its long entrance ramp (opposite), its colorful forms, and its outdoor rooms, such as a dining patio (bottom).

Fernau & Hartman helps heal the architectural wounds of a previous era with a new **STUDENT CENTER** at Evergreen Valley College





By Clifford A. Pearson

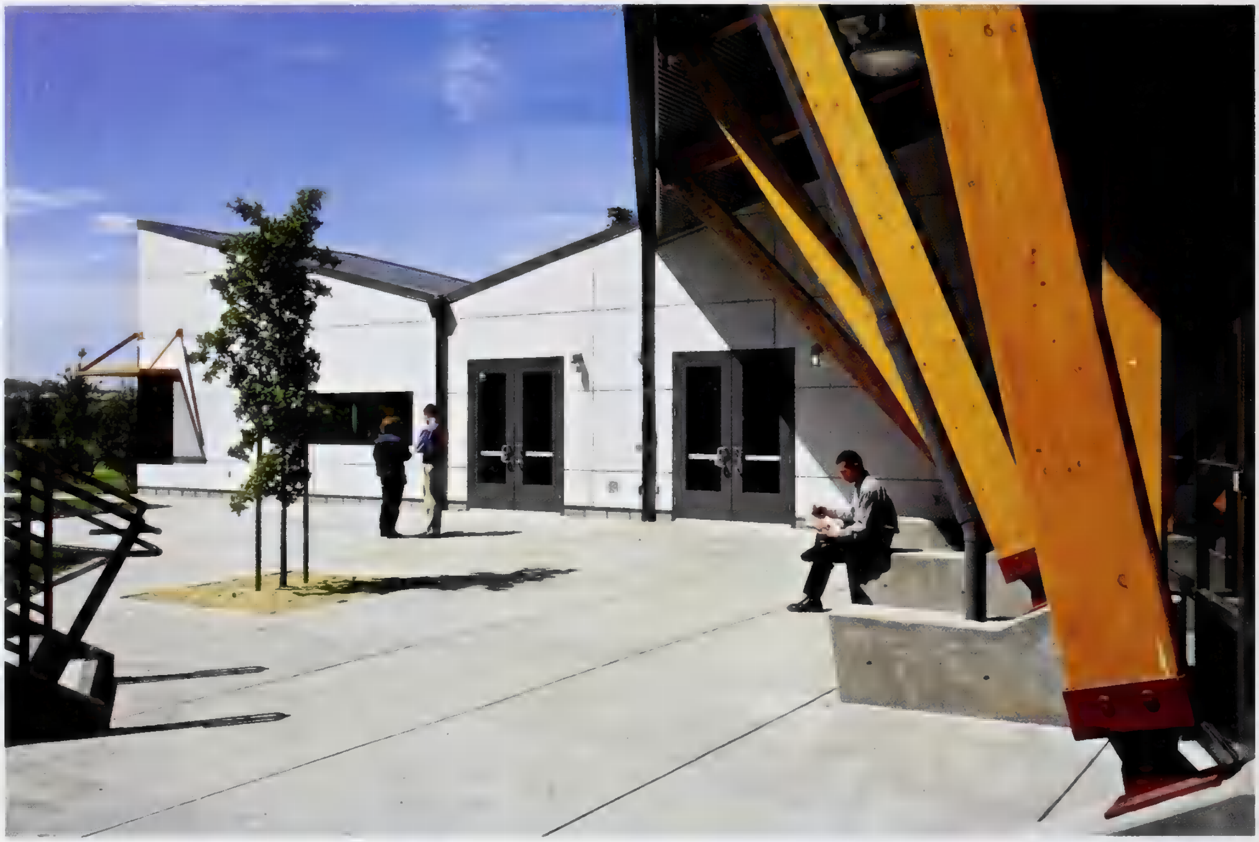
Surrounded by bunkerlike buildings from the early 1970s, the new Gullo Student Center at Evergreen Valley College reaches out in every direction, playing the part of the gregarious new kid intent on enlivening a class of aging slackers. It's a tough act to pull off, considering the campus' relentless march of concrete structures painted dull pink and the ill-defined outdoor spaces that seem to just loiter between buildings. Although it occasionally tries too hard to please, the student center takes an important step in transforming a bland commuter school into a place that engages students, faculty, and visitors.

The project began with a new master plan for the community college in 1993, prepared by Fernau & Hartman Architects, the Berkeley-based firm that had earned strong reviews for its student center at the University of California, Santa Cruz, in 1989. The master plan, which was revised by Fernau & Hartman in 1995, envisioned a series of new buildings and set out five guiding principles for future construction. These guiding strategies called for each new building to "express its program and allow the activities within to contribute to the liveliness of the street," to act as stewards of the landscape by revealing the best aspects of the school's site, to contribute at least one distinct outdoor room or space to the campus, to help repair the design mistakes of the past, and to encourage a sense of destination, arrival, and orientation. "We believe that each new building should do more than one thing well and ideally should address to some degree all of the guiding ideas," says Richard Fernau, FAIA, one of the two principals in charge of the project (along with Laura Hartman).

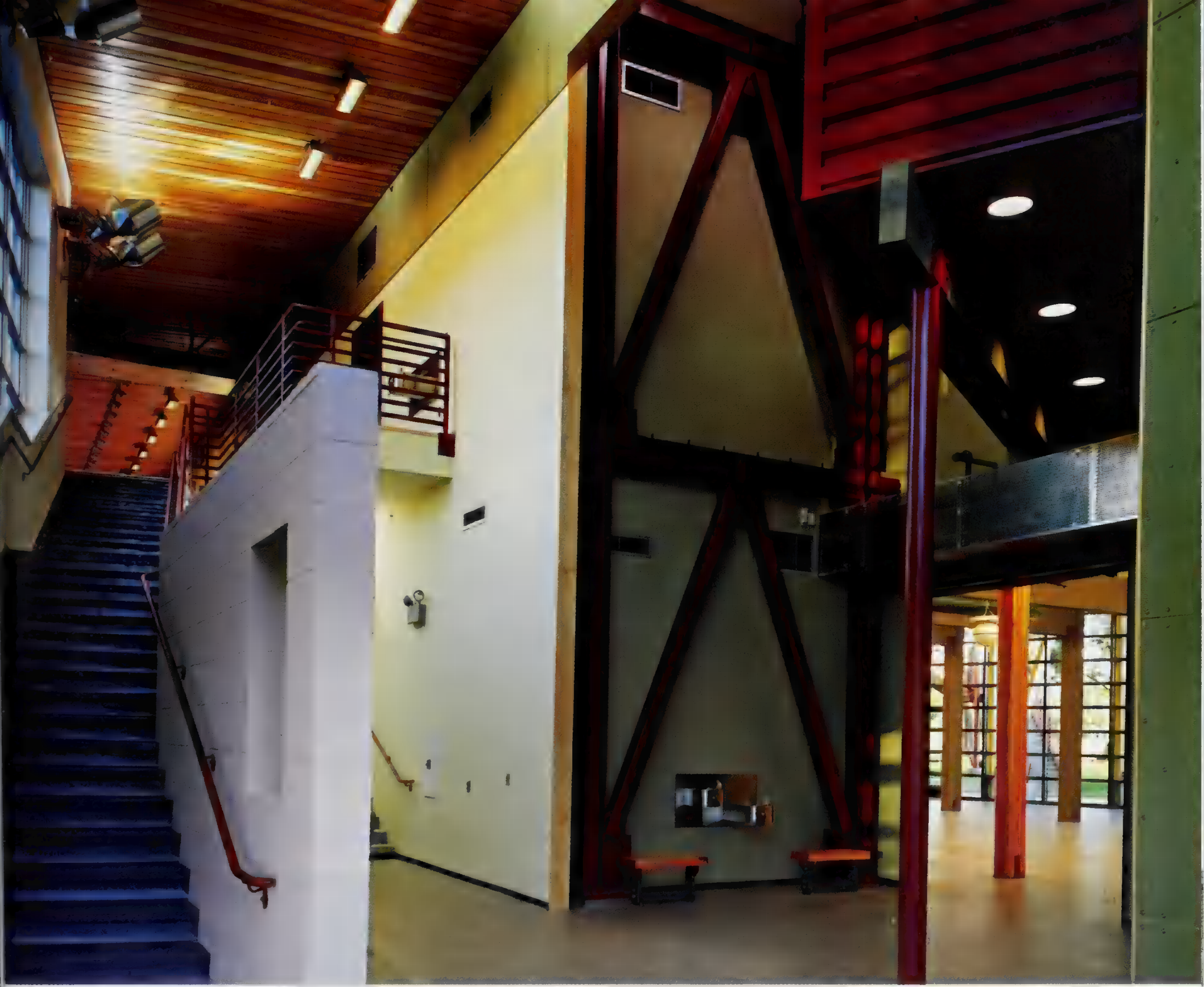
A two-year community college with close to 12,000 students—the majority of whom are Asian or Hispanic—Evergreen had long needed a building that could serve as a physical and social hub for the campus. The new student center does exactly that. "We wanted something different from the rest of the campus, something that would stand out," states Richard Baiardo, the college counselor and a member of the facilities committee that oversaw the project. "We figured this might be the one place we could make an architectural statement," adds Baiardo.

In California, student centers are paid for by student fees, not by general university funds. As a result, these buildings are "the poor stepchildren of the university system," explains Fernau. But when a wealthy benefactor died and left several million dollars to Evergreen, the student center project acquired enough funding to become a significant building on campus. (The building was eventually constructed for $5.9 million and opened this spring.) "There weren't many places for students to gather," says Baiardo. "We wanted something interesting to keep stu-

Project: *Gullo Student Center, Evergreen Valley College, San Jose, Calif.*
Architect: *Fernau & Hartman Architects—Richard Fernau, FAIA, Laura Hartman, partners-in-charge; David Kau, project architect; Tom Powers, Sunshine Chen, Keith Dubinsky, Ariel Dunkel, Sean Gilmore, Thomas Hashberger, Randy Hellstern, Geoff Holton, Henry Kitchell, Alice Lin, Mark Macy, Alexis Masnik, Don Najita, Mary Lynn Radych, Ramon Ramirez, Aaron Thornton, Mathew Tierney, team*
Engineers: *Tipping-Mar + Associates (structural); William Mah (mechanical); O'Mahoney and Myer (electrical); Underwood and Rosenbloom (civil)*
Consultants: *Ron Lutsko Associates (landscape); BEC Associates (energy); Charles Ramm (food services)*
General contractor: *Arntz Builders*



Although just 30,000 square feet, the building feels bigger thanks to a few double-height spaces such as the dining hall (below) and the west lobby (opposite). A 25-foot-tall glass wall in the dining hall and a south-facing patio (left) connect interior spaces to the outdoors and stretch their apparent size.

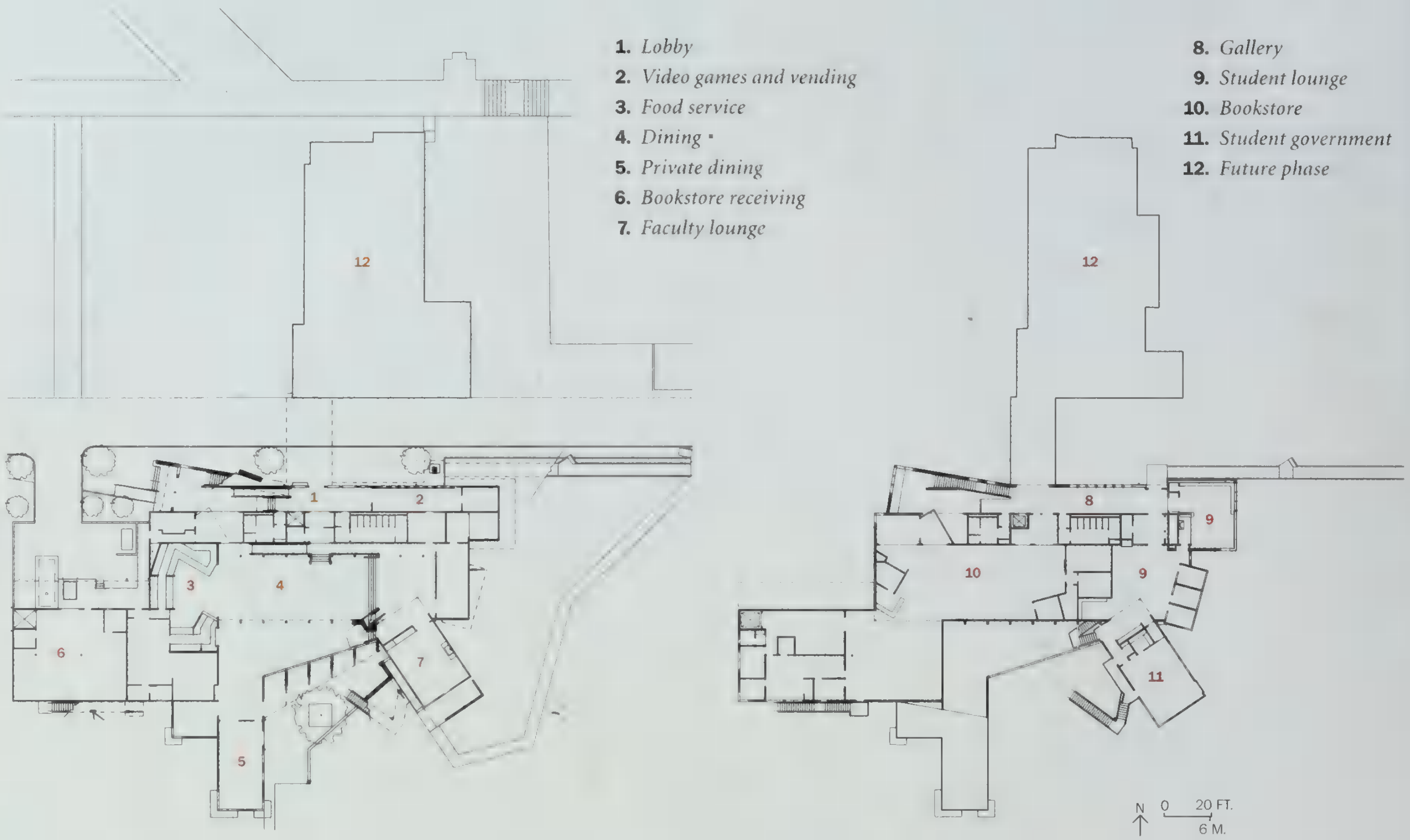


dents on campus. We didn't want to be just a commuter school where people take classes, then leave."

Finding the right spot to build the student center was the architects' first task. They originally selected a site at the northern apex of the campus so the building could serve as a prominent gateway. But they discovered a seismic fault line running through that site and shifted the project to a location closer to the center of the school. Fernau says this turned out to be a good move, allowing the building to have a greater impact as a piece of connective tissue for the campus. It also positions the building to define a key corner of the school's Central Green and to make this outdoor space a more active place. A second phase of the project, which is still on the boards, will be built on the other side of a service road and connected to the first phase by an enclosed bridge. This addition, which will feature a cafe, student offices, and a multipurpose room, will further activate the Central Green and include an outdoor amphitheater on its east side.

One of the challenges of student centers, explains Fernau, is the tendency to pack too many programmatic elements into one building. Every student group and service provider wants to be included in the project, especially at a school such as Evergreen, where extracurricular facilities had long been shortchanged. "We worked with the client to keep the program well defined," says Fernau. "Otherwise it becomes impossible to accommodate everything and give the building a clear identity. At some schools, the student center becomes just a generic container for too many activities."

The major tenants of the building—including the campus bookstore, dining services, and student government—all wanted to be on the main floor and have their own presence. Instead of trying to squeeze all of these components onto one level, Fernau & Hartman designed a building with two main floors and two main entrances. A long entry ramp on the east end of the building serves as an important identifying element while bringing people up to the second floor and the bookstore. At the west end, a two-story space welcomes visitors and leads them to the dining hall. As they shaped the building, the architects organized its various functions into three basic elements: the "worm," which runs along the north edge and serves as the main circulation spine; the "wedge," which is a great sloped-roof hall for dining; and the "wing," which is the phase-two structure on the other side of the service road.



1. *Lobby*
2. *Video games and vending*
3. *Food service*
4. *Dining*
5. *Private dining*
6. *Bookstore receiving*
7. *Faculty lounge*
8. *Gallery*
9. *Student lounge*
10. *Bookstore*
11. *Student government*
12. *Future phase*

FIRST FLOOR

SECOND FLOOR

The student center has a lot of perimeter, so it can provide exposure for more of its components, explains Fernau. The roof pops up and windows project out to give visibility to the bookstore, the dining hall, the student government offices, and the student lounge. Such articulation contrasts with Evergreen's original buildings, which hide their functions behind deep arcades and uniform concrete walls.

"We envisioned the student center as a set of background and foreground pieces," says Fernau. To this end, the architects specified beige-colored cement fiberboard to serve as a backdrop for projecting volumes clad in green or burnt-orange metal siding and accented with red metal railings, yellow perforated-metal sunshades, and stained glued-laminated timber. The same palette of materials and colors runs through the building's interiors.

The building is a steel-and-laminated-wood structure with wood shear walls on the perimeter and three steel braced frames inside. (Braced frames have members assembled in triangles.) The roof itself, a seismic collector, brings forces to the braced frames. Rather than hiding such structural gymnastics behind drywall or hung ceilings, the architects exposed them, painted the metal members red, and used them as sculptural elements to animate interior spaces.

The 30,000-square-foot building packs a lot into limited space by using certain rooms for double duty. For example, the second-floor hallway also serves as an art gallery, and the dining hall can host student fashion shows in which models saunter down an open metal stairway. (The school has a well-regarded department of fashion design.) Fernau & Hartman also made the building feel bigger by framing views of nearby athletic fields and the Central Green and by extending spaces such as the dining hall with outdoor rooms.

The architects approached the Gullo Student Center as the intersection of various forms and elements expressed on both the exterior and interior. Indeed, bringing things together is what this building is all about: It creates a place for students and faculty to relax and establishes a sorely needed social hub for a changing institution. While the combination of materials and colors occasionally seems hyperactive, the building brings an outgoing personality to a campus better known for its phlegmatic design. Most important, it is an engaging center of gravity for a school that once seemed as rootless as a crush of commuters. ■

Sources
Curtain wall: *Kawneer*
Metal siding: *Tomen Building Components*
Cement panels: *Eternit*
Built-up roofing: *Johns Manville*
Elastomeric roofing: *Grace*
Metal roofing: *A.E.P. Span*
Skylights: *O'Keefe's*
Metal doors: *Stiles*
Cabinetwork: *Northwestern Design*
Paints and stains: *Dunn-Edwards*
Paneling: *Medite*
Plastic laminates: *Nevamar*
Floor/wall tiles: *Dal-Tile*

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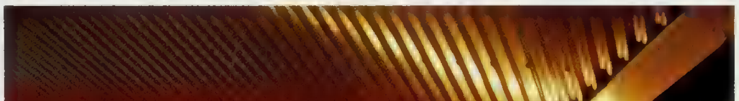
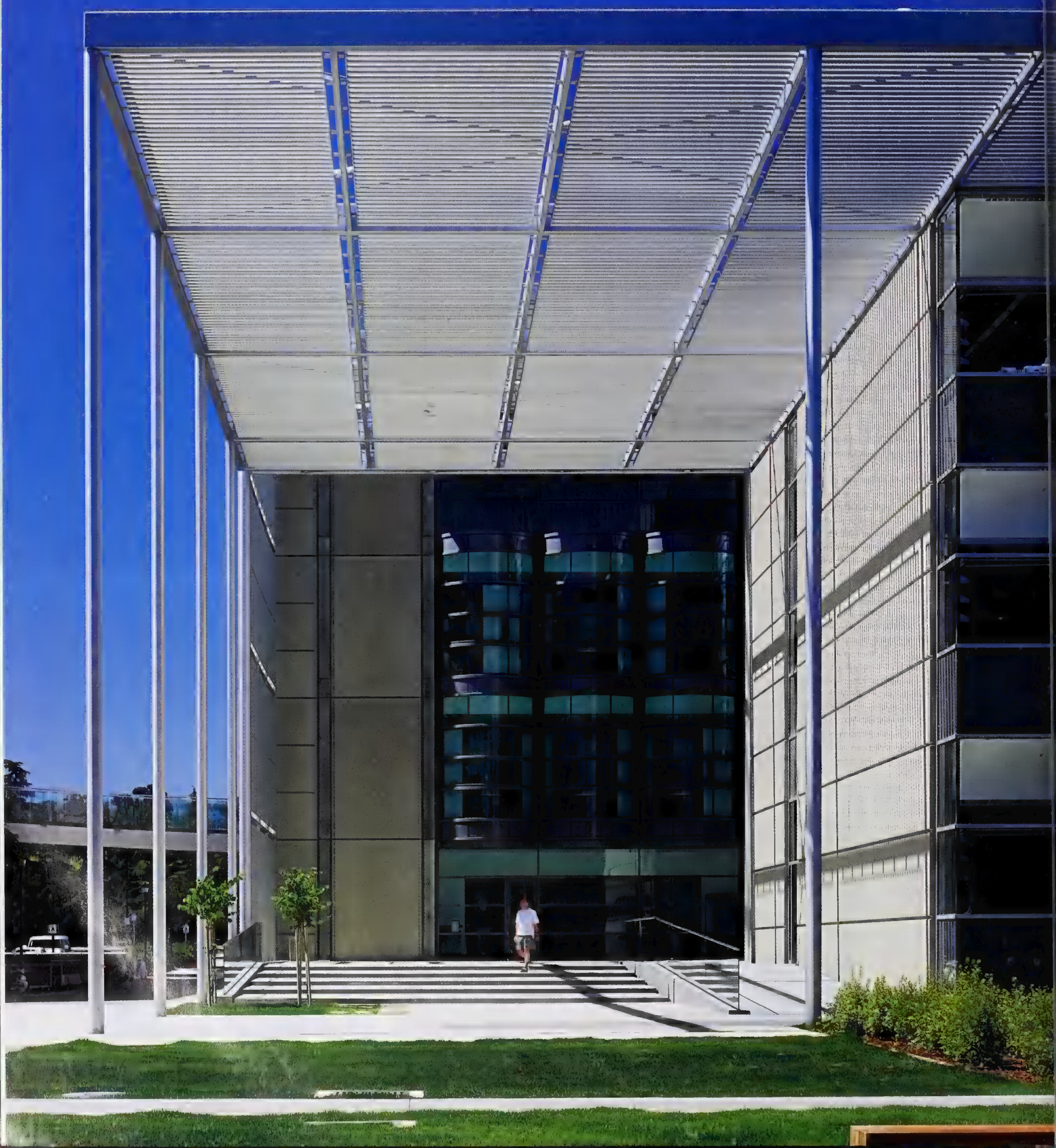
On both the inside and out, the architecture expresses the intersection of forms and materials. On the second floor, a sitting area (right) is tucked off the main spine, and the student government room (below right) projects out to the landscape. Glulam beams work with corrugated metal and painted drywall to create a warm palette of materials (below left).



An aluminum-rod brise-soleil mounted at roof level protects the north elevation in summer (opposite) and extends to form a sun-dappled entrance court (this page).



Solar protection in Norman **Foster's** hands creates an elegant gathering place for scientists at **STANFORD** University's new Center for Clinical Sciences

By Lisa Findley

Though it is admirable, the current trend of universities across the country commissioning big-name architects to design their buildings is fraught with difficulty. At institutions like MIT, the University of Cincinnati, and Princeton, internationally known architects are struggling to do significant buildings within highly constrained campus plans, design guidelines often based on strong, sentimental attachments to the original architecture, and marginal budgets. For the recently completed 220,000-square-foot Center for Clinical Sciences Research at Stanford University, in Palo Alto, Calif., Foster and Partners of London, with San Francisco–based Fong & Chan, has successfully negotiated these pitfalls with a design that is simultaneously contextual and challenging. The building is one of several projects that Stanford has commissioned in recent years in an effort to bring high-quality architecture to the school, while extending and clarifying the existing fabric of the campus. Spearheaded by university architect David Neuman, FAIA, Stanford's program has resulted in noteworthy buildings by Antoine Predock Architect, Pei Cobb Freed, Polshek Partnership, Ricardo Legorreta, and Robert A.M. Stern, among others.

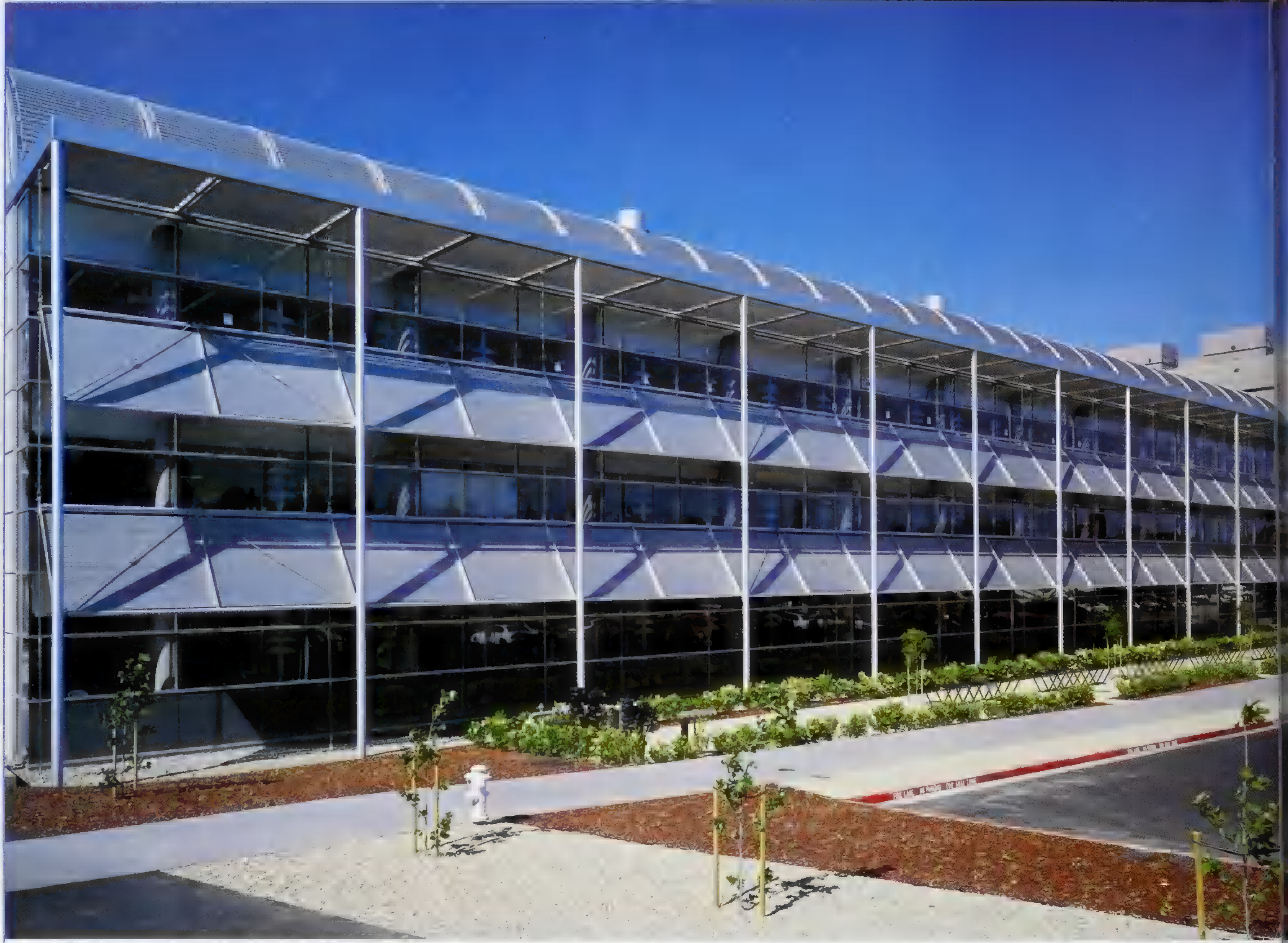
For technophile architects like England's Lord Foster, the strong Spanish Colonial architecture that forms the historical core of the campus was one of the demanding aspects of designing a new building at Stanford. Built in 1887–1906 and designed and planned by Shepley, Rutan and Coolidge and Frederick Law Olmsted, the campus has arched colonnades, sloping red tile roofs, courtyards, and sandy-colored walls with punched windows defining a palette that many in the university community consider its true identity. Fortunately for Foster and his building for cancer research, the site was adjacent to the Medical Center, a massive, three-story courtyard complex of 1,240,000 square feet that Edward Durell Stone had executed in 1959. With its patterned concrete block and flat roof, the design was more reminiscent of Frank Lloyd Wright's textile block architecture than it was of the historic core. Now Stone's building, located on the edge of the campus, forms a link between the old architecture and Lord Foster's decidedly Modernist vocabulary of concrete, glass, and steel.

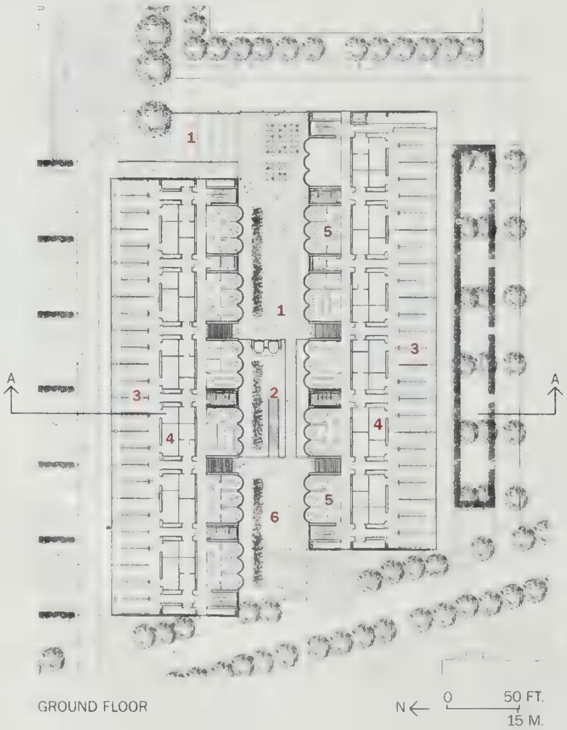
Foster and Partners' winning scheme called for two parallel 300-foot-long, four-story-high bars, slightly offset and separated by a narrow courtyard. In the two buildings, three floors of offices for researchers face the courtyard, while laboratories are placed on the periphery. The fourth floor contains administrative offices and meeting rooms overlooking the courtyard, with large mechanical decks placed above the laboratories. This straightforward solution, which brings to mind the classic laboratory layout designed by Louis Kahn for Jonas Salk at the Salk Institute in La Jolla (1959–1967), is elaborated in response to the solar orientation and relationship of the facility to the campus.

Contributing editor Lisa Findley writes about architecture and design and teaches at the California College of Arts and Crafts.

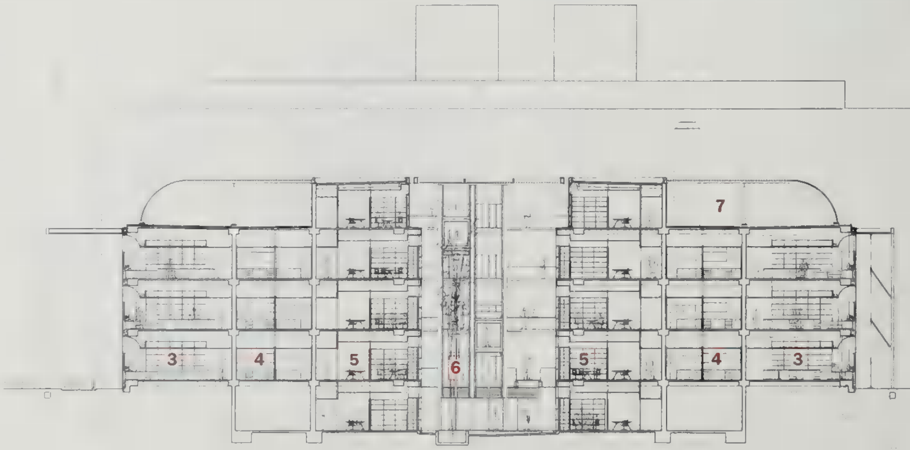
Project: *Center for Clinical Sciences Research, Stanford University, Calif.*
Architect: *Foster and Partners—Norman Foster, David Nelson, Nigel Dancey, Chris West, Tom Leslie, Steve Best, project team*
Associate architect: *Fong & Chan Architects*
Owner: *Stanford School of Medicine*
Interior designer: *Research Facilities Design*
Engineer: *Arup*
Consultant: *Peter Walker & Partners (landscape), Claude Engle Associates (lighting), Walsh-Norris & Associates (acoustical)*
General contractor: *Rudolph and Sletten*

PHOTOGRAPHY: © RICHARD BARNES (EXCEPT AS NOTED)





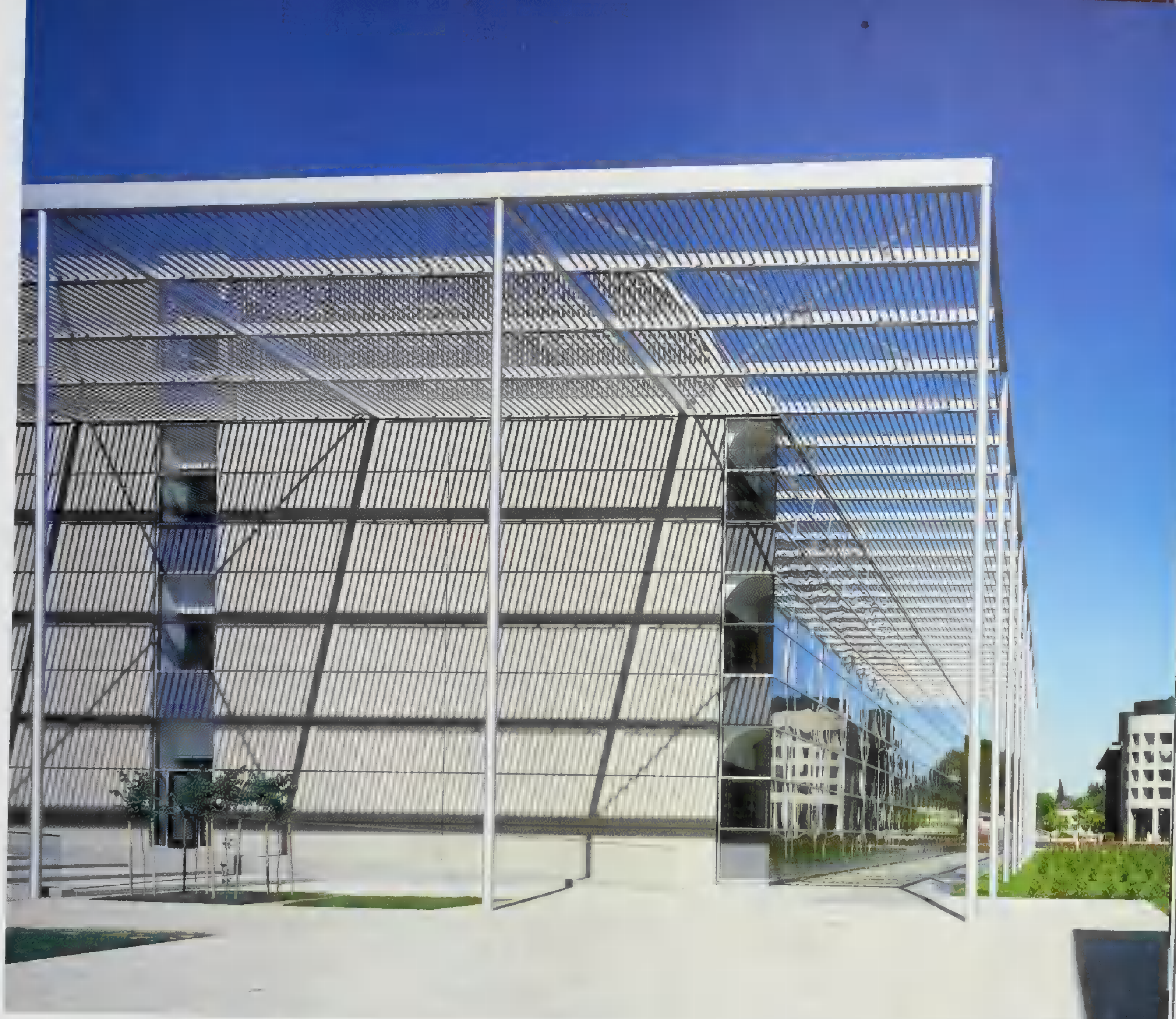
GROUND FLOOR

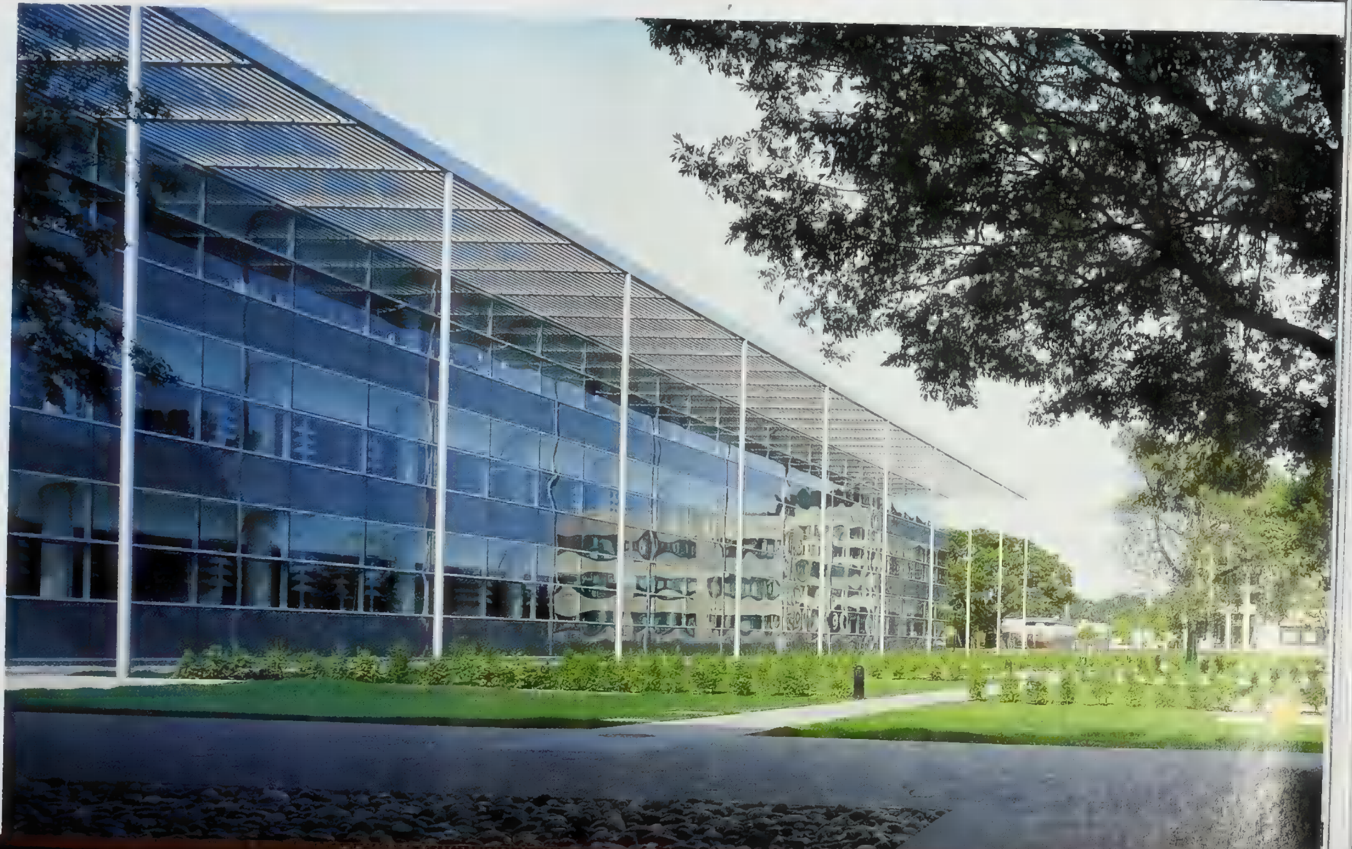


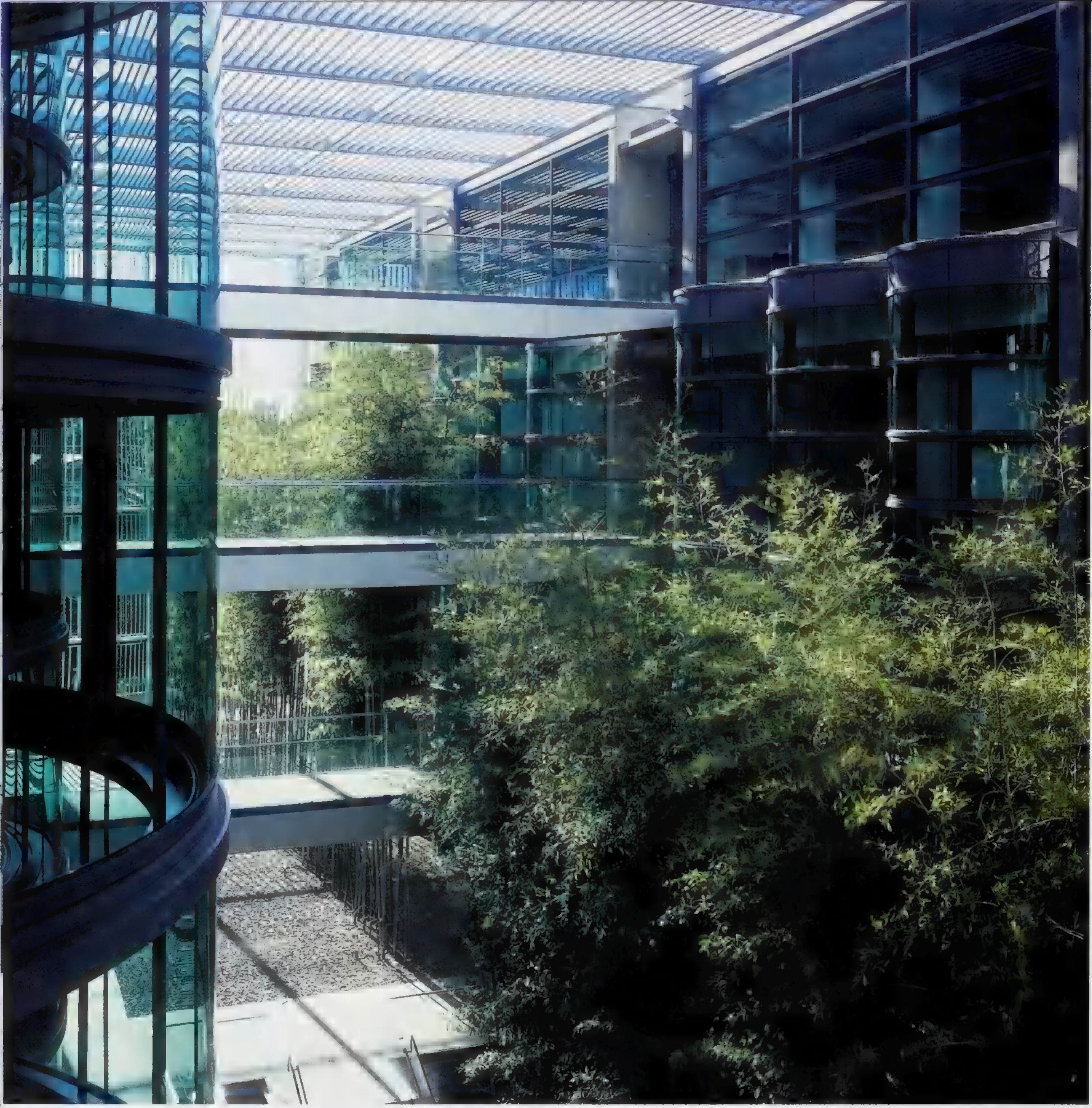
SECTION A-A

1. *Entrance*
2. *Stair to lower courtyard*
3. *Labs*
4. *Lab support*
5. *Offices*
6. *Courtyard*
7. *Mechanical penthouse*

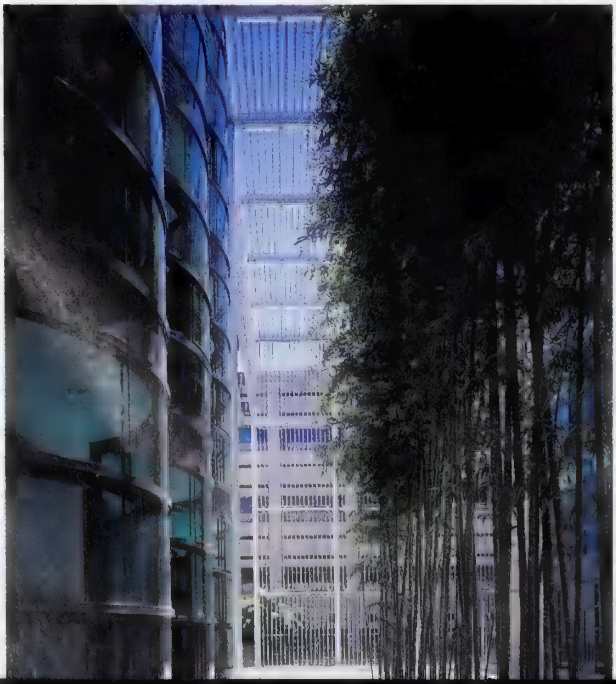
The economy of the two boxlike lab wings—clad in straightforward precast panels and glass-and-metal curtain walls—is disguised by the elegant treatment of the external sun-protection devices. Labs (plan) are protected by the high north-facing trellis (right) and the canted fabric panels that deflect low winter light from the south elevation (opposite).

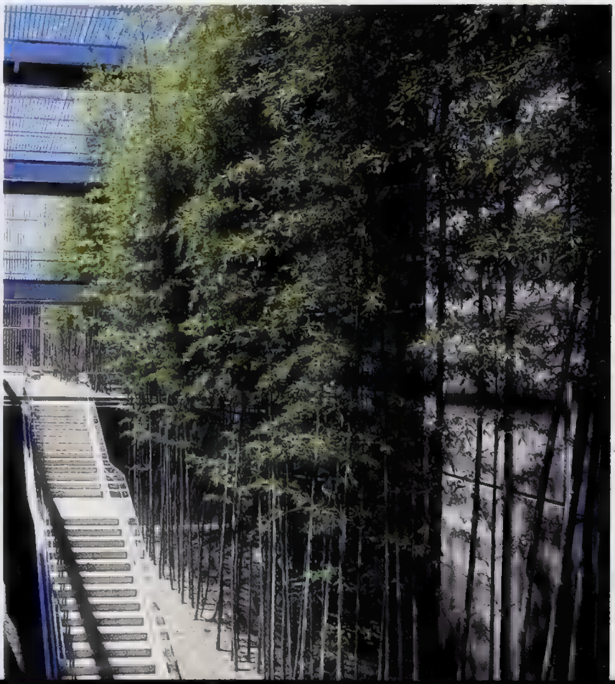


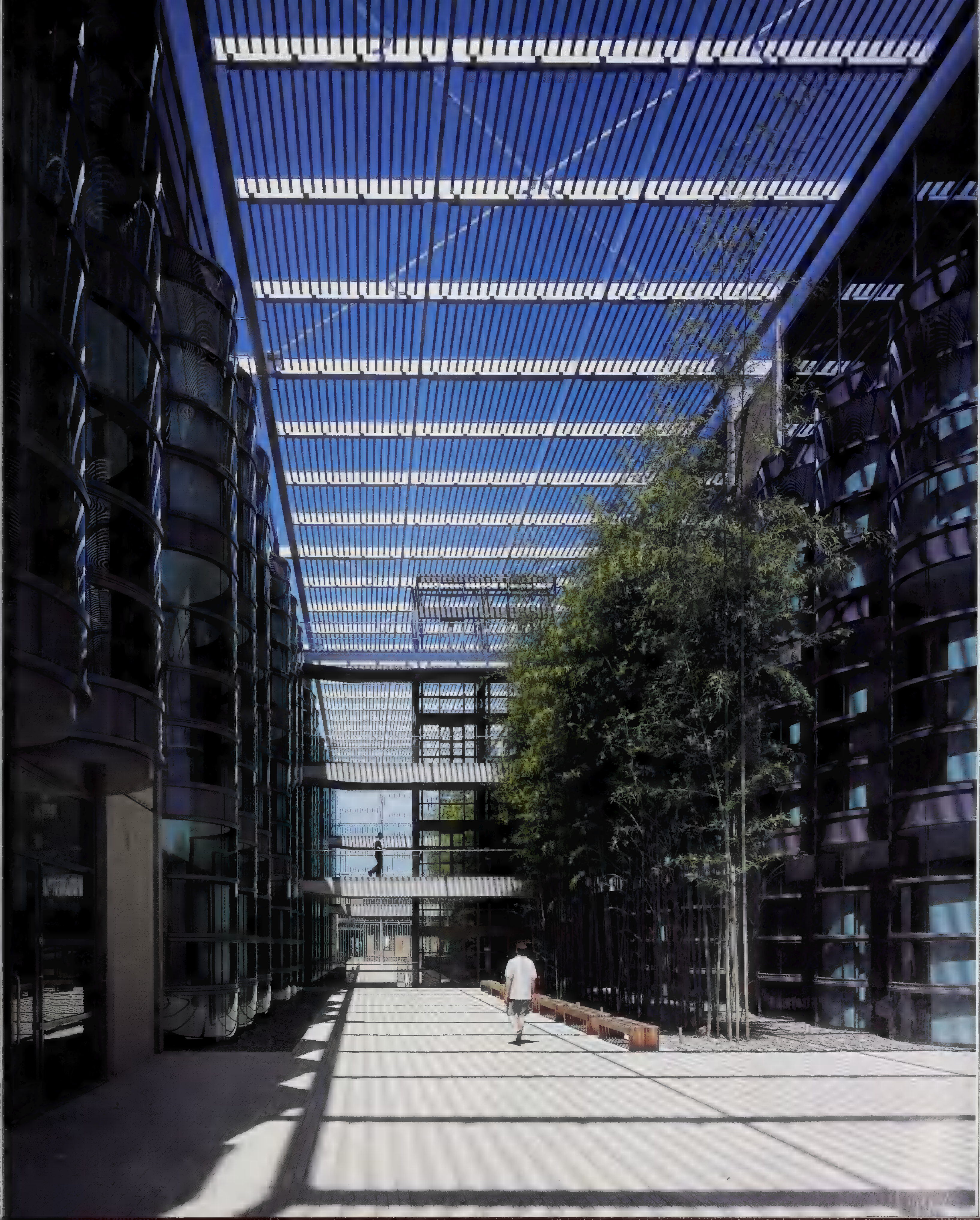




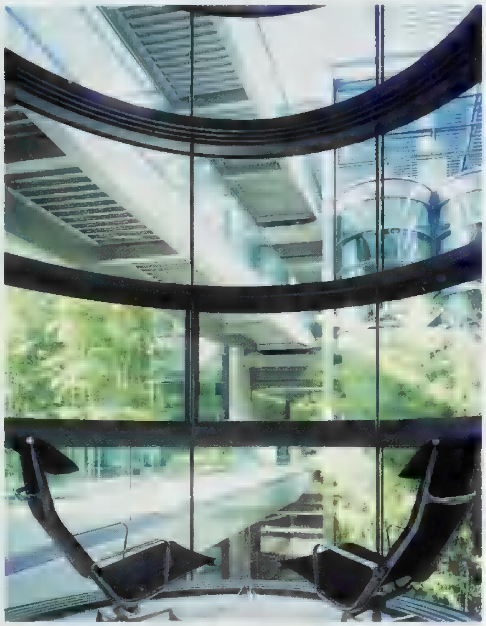
Foster's high aluminum-tube trellis modulates the powerful light and occasional heat, allowing the courtyard that separates the Clinical Research Building's two wings to become an unusually inviting extension of the interior. The elevator core is actually a glazed framework attached to connecting bridges (opposite). Landscape architect Peter Walker's lush stands of bamboo echo the texture of the trellis.

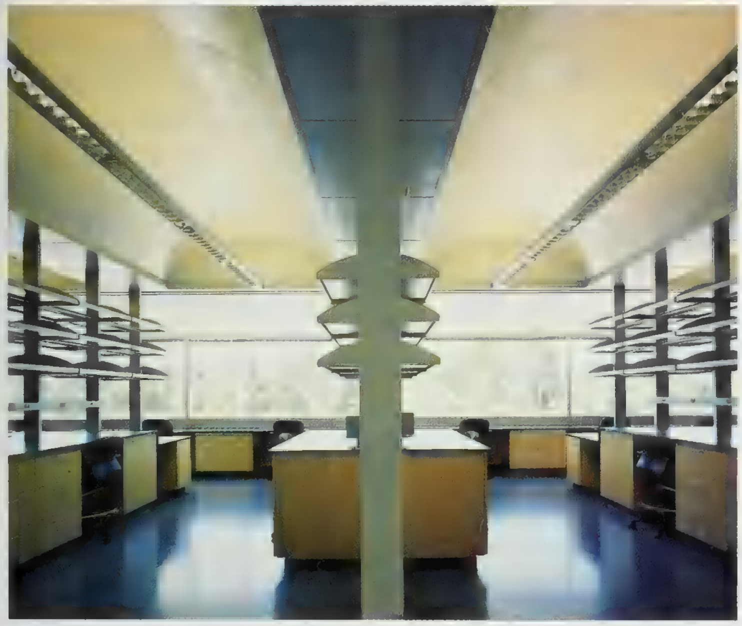


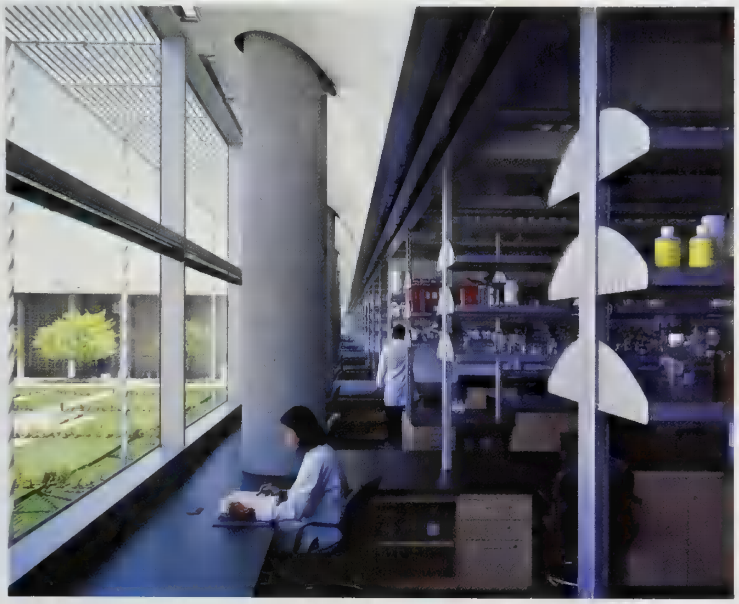




Semicircular extensions of faculty offices open to the courtyard (right and opposite). Sections of the window are operable, minimizing the need for air conditioning. Labs (below) are conventional, with fume hoods and other mechanically intensive activities pushed toward the inner wall. The curved ceiling at the window edge diffuses light dappled by the external protections.







PHOTOGRAPHY: © RICHARD BARNES (OPPOSITE, THIS PAGE TOP & BOTTOM); JOHN EDWARD LINDEN (MIDDLE)

The long, glass curtain walls of the external north and south exposures provide daylight and views for the state-of-the-art laboratories. The south wall, facing a parking lot and vulnerable to intense sun, is shaded by a set of horizontal, lightweight perforated steel sails that will be removed if and when the parking lot is filled with another building.

The north facade faces the campus. Along this edge, a colonnade of thin, three-story-high steel columns, holding up a horizontal, tubular, aluminum lattice, creates a remarkable porch for a garden designed by landscape architect Peter Walker, whose design in turn takes into account the rhythms of the Foster building. The tubular steel lattice continues up and extends over the mechanical deck, enclosing the top and ends of the courtyard and generating striated patterns of light and shadow.

The glazed courtyard walls read as bundled, semicircular vertical shafts: Repeated over four floors, these glass drums give a sense of scale to the otherwise elongated courtyard edges. The rhythm of the bays is further reinforced by the vertical thrust of tall bamboo trees that rise up through the long courtyard space. Inside, the semicircular bays offer each researcher a small conference area jutting into the courtyard, affording privacy and control of air through sliding fabric screens and operable windows .

The courtyard parti, which Kahn made famous for laboratory buildings, was intended to facilitate interaction and exchange between scientists who tend to isolate themselves in their labs. At Kahn's Salk Institute, the courtyard is formal, empty, and austere, urging the eye (and mind) out to the horizon of the Pacific. In stark contrast to this man-made desert, with its infinite horizon, Foster has created a jungle at Stanford, characterized by filtered light, intense texture, and restricted vision.This visual density and activity is appropriate for a university building where, unlike the Salk, students come and go to seminars and anatomy classes, work in labs, and enjoy coffee in the garden.

Foster and his associated architects have created a structure that both fits in with the context and stands out from it. Programmatically, it is a background building, one of the many big laboratory and classroom facilities that define any university science complex. It politely fits into the campus plan by reinforcing walkways, helping to define the edges of open spaces, and continuing a pattern of welcoming courtyards. It responds to the warm, buff-toned palette of the existing buildings, and the tubular aluminum lattice canopy adds a texture at the top that abstracts, perhaps a bit awkwardly, the red roof tiles of the old campus.

Materially, the Center for Clinical Studies is a radical and refreshing departure from much of the campus architecture and also a welcome relief from the constrained architecture of many of the other newer projects. Foster's unabashed love of high-tech materials is only slightly dampened by the concrete end panels. These minimal compromises allow Foster to endow Stanford with a vision of where it might go with its ambitious building program, if it is brave enough to continue to break with the rigid definitions of contextualism. The university's support of this stance represents the visionary leadership one would expect from a top university. ■

Sources

Exposed steelwork: *Bostram & Bergun*

Architectural glass and aluminum: *Wausau Metals*

Concrete: *Precast by Clark Pacific*

Acoustical ceiling: *Ireland Ceilings, Pinnacle Ceiling Systems*

Resilient flooring: *Armstrong Medintech*

Office furniture: *Dependable Furniture Manufacturers*

Chairs: *Wilkhahn FS, Vecta*

Lighting: *Taylor Stokes Lighting*

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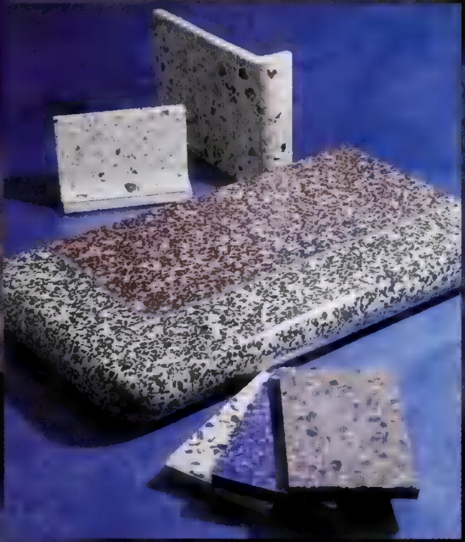

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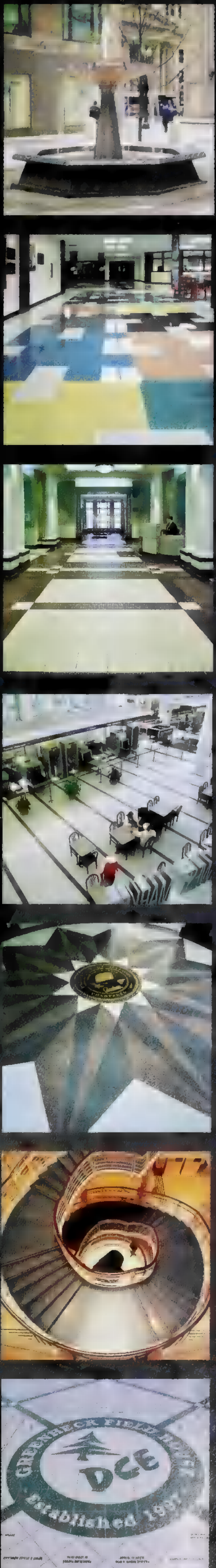

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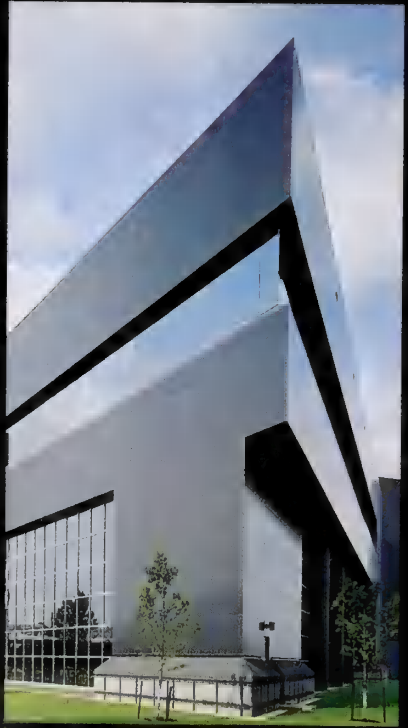

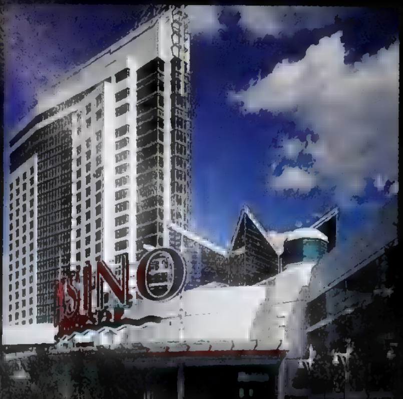

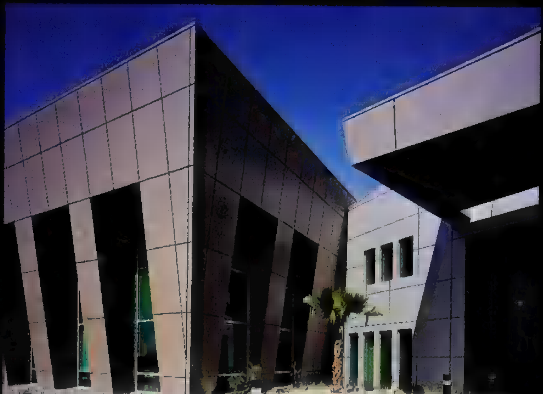

Where To Now?

THE BURSTING OF THE DOT-COM BUBBLE MAY ACTUALLY HAVE MADE BUSINESS OWNERS MORE AWARE OF DESIGN'S PRODUCTIVE POTENTIAL.

1.

Nottingham, England

DEGW helped Boots the Chemist redesign its corporate culture along with its headquarters.

2.

Chicago

Valerio Dewalt Train choreographed a ballet of calibrated planes and shimmering translucency in the design of its own offices.

3.

New York City

Specht Harpman built a fluid space tuned to the vagaries of a company that bet on growth.

4.

Emeryville, California

Kava Massih preserved an old factory's airy grandeur and gave a growing software company the space it craved.

PHOTOGRAPHY: © RICHARD BRYANT/ARCAID (1); BARBARA KARANT (2); MICHAEL MORAN (3); ETHAN KAPLAN (4)

WWW

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By James S. Russell, AIA

With his London-based firm, DEGW, Frank Duffy has for years promoted the value of design as innate to the expression of corporate identity in an era of perpetual change. Has a chillier business climate and a dot-com implosion cooled his ardor? Not at all, as RECORD'S *James S. Russell found in a recent interview.*

ARCHITECTURAL RECORD: *How does business relate to design now?*

FRANK DUFFY: The big discovery we've made in the last two to three years is that the design process itself is an amazing opportunity for a business to reinvent its culture. The expressive component of architecture can be used as a medium of communication—one that makes the intentions of the business powerful and ever-present. It's one thing to say that a company seeks organizational transparency, that it likes to be egalitarian. It's quite another when you use the language of architecture to say it. Then, design becomes absolutely central to the business.

AR: *Can you update a distinction between the North American approach and that in northern Europe that you described in your book,* The New Office *(London: Conran Octopus, 1997)?*

FD: America's capacity to homogenize and do things simply and cheaply at a very large scale is one of the nation's virtues. But when people stop thinking about what buildings are, rubbish gets turned out. There's a photo essay in the *On the Job* exhibition [at the National Building Museum, in Washington, through August, see RECORD, March 2001, page 59] that shows an endless line of bleak, gas-guzzling office buildings along the corridor to Dulles airport. This is what has ended the century that began with Frank Lloyd Wright's Larkin Building. Why aren't people angry about this? Even in the U.K., there is deep in the culture an understanding that buildings are an important part of life and bear a relationship to how people want to be and what they want to do.

AR: *What do you think accounts for the difference in the way architecture is valued here versus in Europe?*

FD: I come from an old country with more stable institutions. But they've been shaken again and again by a series of frights over the last 50 years or so. So there is a real urgency to the idea of reinventing the physical fabric to achieve cultural change. When countries hand state enterprises to the private sector to increase efficiency, for example, that actually shocks the government departments into rethinking their culture. We're doing the space planning and change management for Whitehall, which is being rebuilt by Norman Foster from its Victorian structure out. We're helping the Department of State use the shock of the move to reinvent itself as one of the most important organs of the State. Other clients, like the BBC, are insecure and frightened enough to want to use the rare and expensive experience of building and rebuilding as part of their reinvention. In America, there's an overconfidence, a sense that nothing can scare us, so we don't have to change anything. But no one can afford to waste human talent, or let the weight of the past impede an organization's promise.

AR: *For all the technical innovation in Europe, I see pretty rigidly laid-out private offices in most "advanced" buildings. Aren't American designers more innovative in the variety and richness of interior layouts?*

FD: There is less creative thought in Europe on that level. The private offices are a legacy of powerful workers councils in Europe, and they're required by law. The regulatory process has stopped people thinking, too. People cannot interact when they are laid out in this formulaic way. The best such projects use internal streets, garden atriums or courts to weave together the idea of shared space with the idea of a comfortable, energy-efficient office environment.

AR: *Why do you think some of the Wall Street darlings—the companies that in a sense have defined America's newly energized business enterprise—use design in such an unadventurous way? I'm thinking of Microsoft, Oracle, Cisco. These are companies that sell innovation but don't innovate when they build facilities.*

FD: I call it the Silicon Valley mystery. The most inventive and entrepreneurial companies build the dumbest buildings with Dilbertville interiors. I think it happened because a particular set of closed, formulaic attitudes got fixed in place. Instead of thinking about and defending the users, the developers, architects, manufacturers of building systems and furniture, the facilities managers and corporate real-estate managers have become just another part of a supply chain. They're cornered and marginalized. There's no communication with users in the process.

AR: *If these companies are so successful, who is to say they need a higher level of design?*

FD: It's very troubling, this presumed correlation between success and ghastly environments. These are barren, lobotomized places. I don't see how companies can succeed over time without a continuous re-creation of corporate culture. And facilities architecture is part of that.

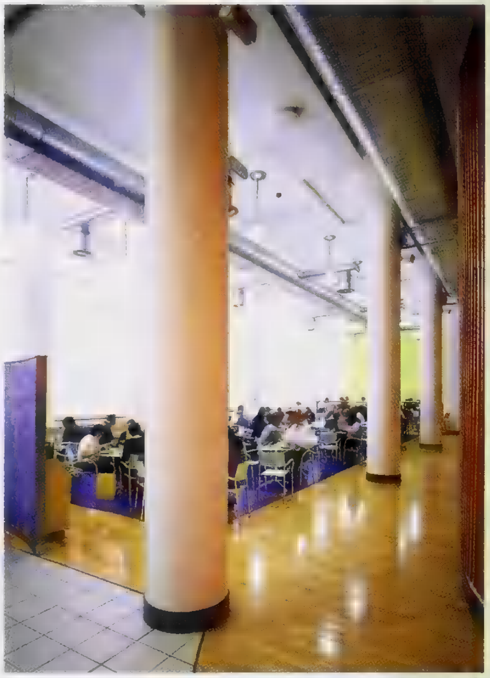
AR: *These companies usually tell us that distinctive design might impede their "exit strategy"—the ability to sell or lease space that's been made surplus by rapid change.*

FD: That's too low level a sense of what generic, flexible space should be. This real-estate logic that you build only one kind of building fails to understand how organizations work. Accencture, a [management consultant] client, has adopted a smarter space strategy for a rapidly evolving organization. It wants to own certain facilities, which will be designed to transmit the culture of the company and protect the brand and knowledge base. Those parts of the organization going through lumpy or fast growth will obtain space on short-term leases. Those operating in an even more fluid environment will use providers who offer fitted-out space for very short-term use. It's much better than obtaining large amounts of Dilbert space in rubbish buildings. It challenges the real-estate industry to look at different kinds of spaces and lease types.

AR: *Is information technology still too disconnected from the kinds of workplace structures it could make possible?*

FD: It is, but it shouldn't be. In BP, a client, there's a place called the hive, which is a theaterlike setting for 20 or 30 people. You assemble in it the geologists, the drillers, and the managers. They can project on a giant screen a virtual model of an oil field in three dimensions. You can turn it upside down, draw sections through it, and have the discussions that are necessary to figure out how to exploit that oil field. In the old days, someone would prepare a financial study, which would be tossed over to the geological people, who would evaluate the feasibility, then toss their conclusions to the engineers. Now the whole discourse takes place in parallel. The assumptions can be debated and new iterations can be prepared for discussion with the model of the real thing right there in the room. Projects like this can only be carried out when facilities people, real-estate departments, and architects are part of the culture and desires of the organization. It can't happen in companies that have hermetically separated real-estate departments as they did in

1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3

A far cry from the cubicles-by-the-yard approach still standard in the United States, DEGW's design process probes corporate culture.

PHOTOGRAPHY: © CHRIS GASCOIGNE

the old assembly-line economy.

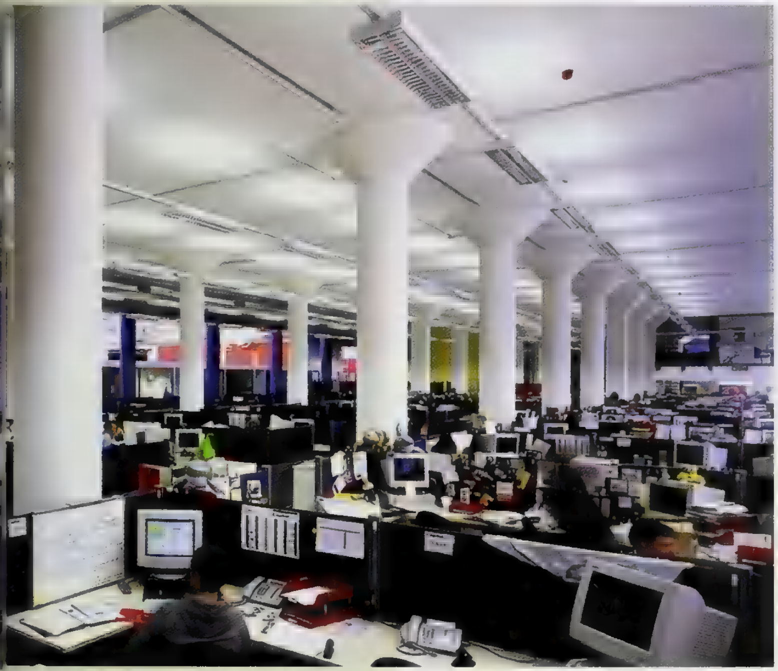
AR: *The dot-com bubble seemed to inflate and then burst in the wink of an eye. What effect do you think that has had?*

FD: I like recessions. This is number four in my life. I think real invention happens in the more competitive situation that you find in a recession.

AR: *The dot-com phenomenon energized older, diverse downtowns. The high-tech boom that preceded it occurred largely in suburban enclaves. Will the downtown trend survive? What have companies learned from it?*

FD: I think it's a permanent trend and also very important. One of the great paradoxes of the virtual age is that the city becomes more stimulating, entertaining, and interesting. People are realizing, in sort of a folkloric way, that what the city is about is contact in serendipitous ways. It's about increasing discourse. We may live in a virtual world that permits dispersal, but we don't have to be dispersed all the time; we can have it both ways.

As a company's vision of itself becomes clear, the variety of work settings has proliferated for such clients as BBC (1), Capital One (a bank, 2, 3), and Egg, an online banking division (4).



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AR: *I've wondered if the traditional utility of downtown is reasserting itself at a new, larger scale. Perhaps you can bring intellectual capital of enormous diversity into a room to brainstorm a new product or project at some unimaginably large or complex scale.*

FD: Organizations these days deal with disintermediation [in which, for example, a paper-based business is replaced by a much smaller online version], outsourcing, and a devolution of responsibilities to a variety of subcontractors and consultants. So companies are becoming more permeable to a whole network of outside organizations. They may deny it, but they work as nodes in a network, rather than as separate entities. You are absolutely dependent on more and more interaction with more and more sophisticated suppliers.

You can say, for example, that 1,500 people work for the J. Walter Thompson advertising agency, but those people coordinate a great number of freelance writers, photographers, artists, and art directors. The agency is just a node in a network that is part of a larger matrix of organizations. We're not good at mapping them, but they're still there. When you work this way, you can't think in terms of those 1950s, 500,000-square-foot chunks of one-size-fits-all buildings. What matters is the relationship of the building and other parts of the city and other organizations.

AR: *In the past, we've talked about much greater mobility and fluidity in the workplace—you've compared the workplace to a city street or a club. Do you think this is still a valid model?*

FD: Buildings that emulate the varied interactions occurring along a vital city street are intended to make the organization and its diverse parts literally transparent to each other. The socialness of the street is actually fundamental to the intellectual nature of a rapidly responding organization, whether it's in Covent Garden or Silicon Alley. The density of the interaction is the way that intellectual resources are made to have maximum impact. These are survival strategies for businesses and cities and economies, and so are vital issues for politicians and economists.

AR: *I see companies moving away from that model. Perhaps they are reacting to the well-publicized failure of the highly mobile workplaces of Chiat/Day Advertising in New York and Los Angeles.*

FD: With Chiat/Day, the design gestures were made without parallel sociological and cultural change in the organization itself. You must drive these two things together. You can redevelop via space, then the space becomes the language of the reinvention, which is 10 times more powerful. But you can't do space without the necessary effort to make sure the culture corresponds to what you've designed. To do otherwise is disastrous.

AR: *When you speak of change management and corporate reinvention, aren't you straying far from architects' expertise?*

FD: Change management doesn't mean anything without physical redesign. That's a big lever that could be seized by management consultants. If management consultants understood the value of design, they'd recognize that they have to get the best designers.

AR: *Are we speaking about a different way to be an architect?*

FD: In Foster's or Grimshaw's office, a drawing of a caster at the nexus of a truss is just a first iteration. You do more iterations with the builder. You don't hand the client a design; you work in parallel with everyone concerned throughout the process. You have to work in a different way if workplace design is to become the language of corporate reinvention. ■

Boots the Chemist
Nottingham, England

1

DEGW HELPED A RETAIL GIANT REDESIGN ITS CORPORATE CULTURE AS IT BUILT AN ADDITION TO A 1968 MODERN MASTERPIECE.

By Adam Mornement

Architect: *DEGW—Frank Duffy, Tim Allen, Stephen Greenberg, project team*
Consultants: *Mott McDonald (structural engineers); Roger Preston & Partners (MEP)*
Construction manager: *MACE*

Size: *425,000 total, of which 200,000 is new*
Completion date: *1999*

Sources
Curtain wall: *Diamond Project Services (rainscreen tiles); Witte UK*
Raised access floor: *Durabella*
Demountable partitions: *Ergonom*
Carpet: *Gaskell Textiles*
Furnishings: *Office Innovations, Leisuretec, Steelcase*
Solar shading/blinds: *Louvre Blind Company; Levolux*

Program

In 1968, British pharmaceutical-retailing giant Boots the Chemist moved into D90, an elegant glass-walled pavilion on the Beeston side of Nottingham, the company's home in the English Midlands. Architect Skidmore, Owings & Merrill had provided what was, for its time, an advanced workplace: hierarchical, functionally segregated, and centrally controlled. It was listed as a historic landmark in the 1980s.

By the 1990s, however, products were sourced and sold worldwide, decisions had to be made quickly in the face of a more competitive retail environment, and projects could no longer be managed in a strictly top-down manner. Flexibility, teamwork, and communication now defined the language of commerce, and Boots needed a headquarters to reflect the shift of focus.

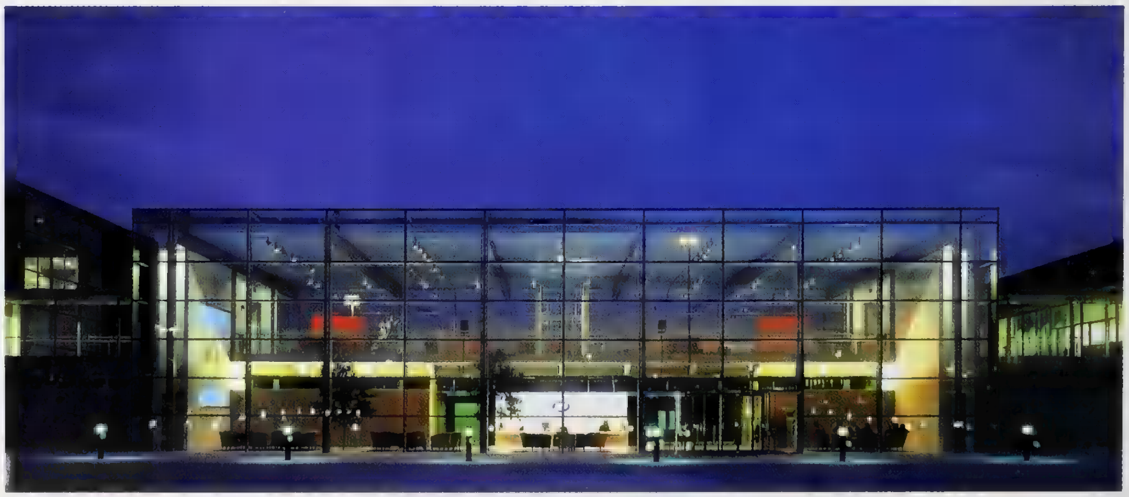
An incoming managing director, Steve Russell, took an expansive view of what should be done. He saw the design and construction process as an opportunity to reposition the company's culture for 21st-century ways of working. Russell decided to bring the 1,400 staffers scattered in five buildings around Nottingham onto the Beeston site, adding them to the 1,000 already in D90.

The company was already working with DEGW, a London-based design practice with a unique focus on architectural design as a means to advance a corporate strategy and culture. DEGW orchestrated workshops among the company's functional divisions, led by a steering group that added representatives from departments working with all the units, such as human resources and information technology. Separate workshops considered issues related to cross-functional job level and job type. "Steve Russell owned this vision," commented DEGW principal Frank Duffy. "But there's a need for leadership and for mass democratic participation to make such profound changes. That may sound like a contradiction, but it's very important."

Solution

Out of the workshops came a rich mix of spaces. A double-height central spine runs from a new DEGW-designed structure through a link with a welcoming entrance pavilion and into the 1968 building. It functions as a Main Street, inviting staffers from units that had previously occupied separate premises to

Adam Mornement is a London-based writer. He is a former deputy editor of World Architecture.



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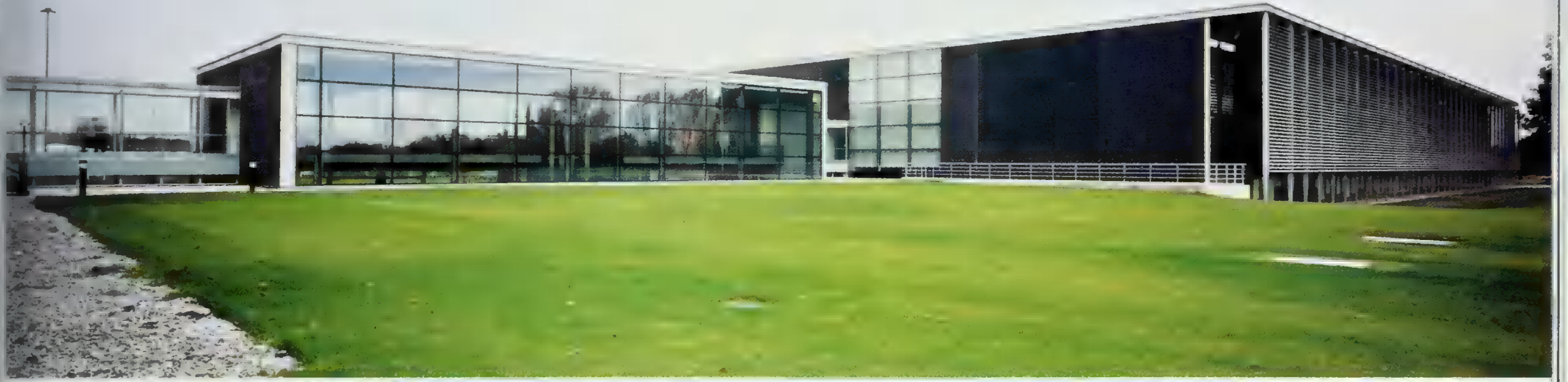
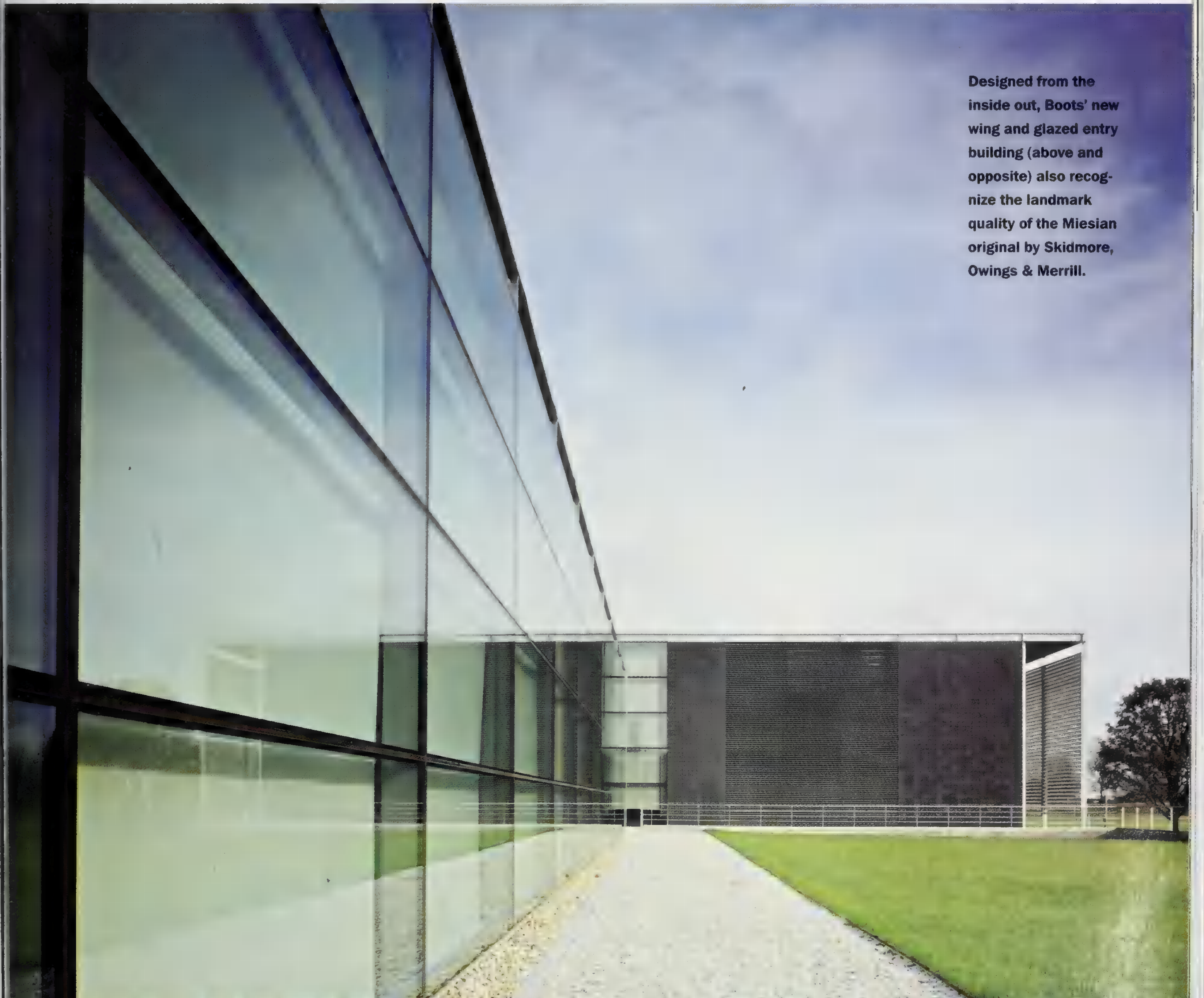
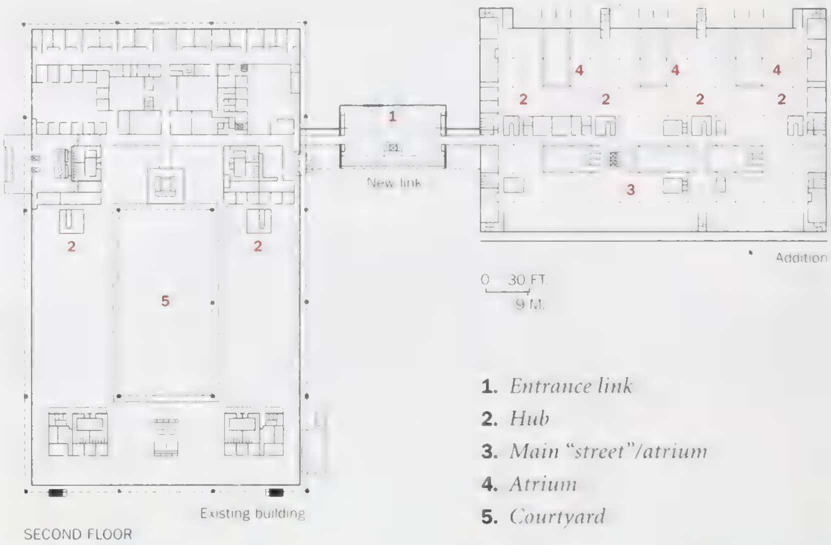




Designed from the inside out, Boots' new wing and glazed entry building (above and opposite) also recognize the landmark quality of the Miesian original by Skidmore, Owings & Merrill.



1. *Entrance link*
2. *Hub*
3. *Main "street"/atrium*
4. *Atrium*
5. *Courtyard*

The two-level "street" extends from the entrance (below) to a new atrium (bottom right and opposite). In the new wing, three tributary atria were attached on a north-south axis (plan). These subsidiary atria offer daylight and views to a high percentage of staff. Bottom left: An SOM stair in the existing building was opened up.

mingle—intentionally or accidentally—in a pleasingly lighted space lined with a cafe, shops, ATMs, and elevators. Wireless telephones and numerous data connections make it possible to stay in touch throughout the building without being tethered to a single desk.

Smaller, color-coded atria give discrete identity and act as a focus for workgroup "neighborhoods." Though each neighborhood is supplied with desks, large meeting spaces, smaller "break-out" areas, and two offices, the number and arrangement of these elements within each neighborhood are up to the individual group.

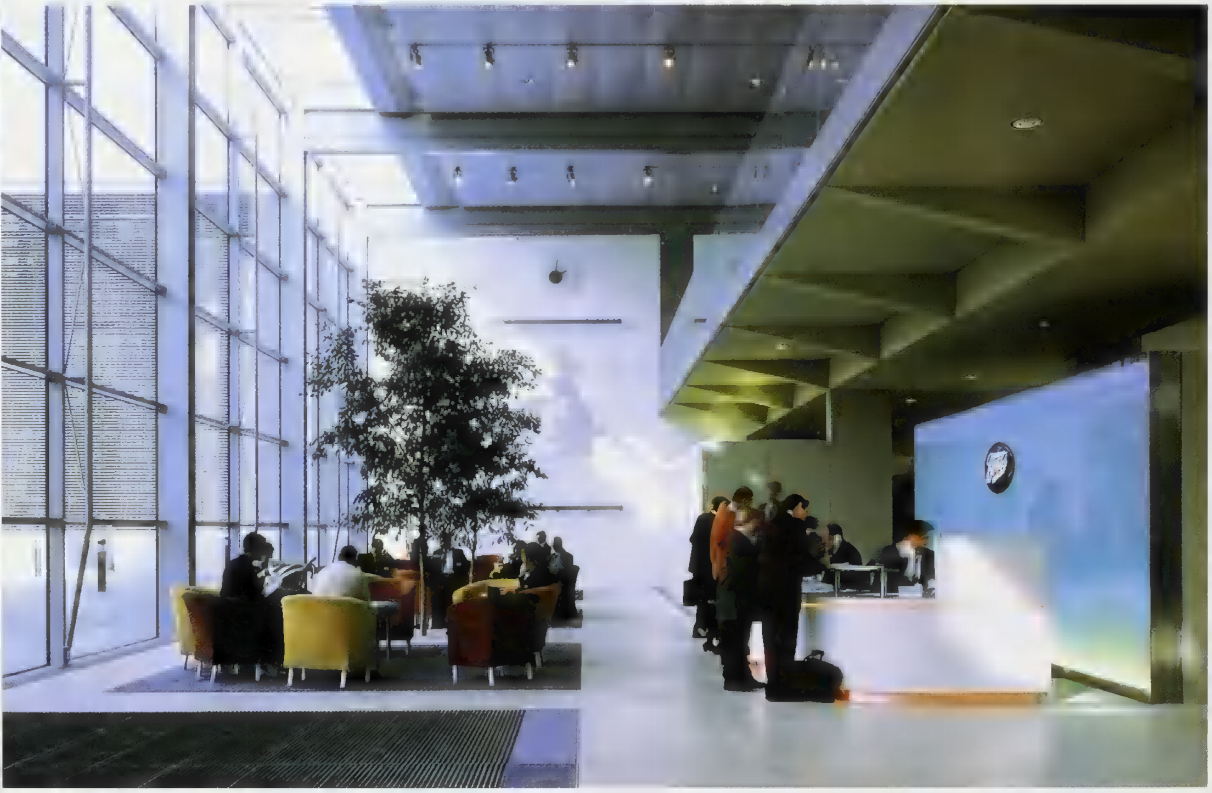
The atrium scheme could not be carried into the existing building, but the neighborhood idea was. High partitions have been removed and the private offices were converted into meeting rooms. "It's now like a big shed," says DEGW head designer Stephen Greenberg.

Architecturally, the expression of the new construction is perhaps more discreet than the original.

Commentary

While some elements (the "street," the cafes, the casual meeting places) are not new ideas, the specific combination of strategies came out of Boots' specific requirements and DEGW's unique process. Tim Allen, of DEGW, sorted out the teething problems with Boots during the building's first year of occupancy. (A team process, akin to that deployed in design, made possible a two-year design and construction process.) Allen still attends meetings that address the way the premises works.

With such emphasis on interaction and social spaces, one imagines a hive of activity. In truth, a great many people seem to work mostly within their "neighborhood." The light, comfortable spaces appear to strike a better balance between easy interaction and a sense of "home base" than other ambitious workplace designs. Both Boots and DEGW offer prospective clients tours of the Beeston campus, a testament to the companies' mutual pride in the project. ■



Valerio Dewalt Train
Chicago

2

VALERIO DEWALT TRAIN CHOREOGRAPHED A BALLET OF CALIBRATED PLANES AND SHIMMERING TRANSLUCENCY IN THE DESIGN OF ITS OWN OFFICES.

By James S. Russell, AIA

Architect: *Valerio Dewalt Train—Joseph Valerio (partner-in-charge); Jason Hall, Ben Krone, James Botatto (team)*
Consultants: *Don Belford (structural); WMA; (mechanical); Charter Sills (lighting)*
Contractor: *Hill Mechanical*

Size: *7,700 square feet*

Sources
Glass: *Christopher Glass/Aluminum*
Metal wall panels: *Epic Metals*
Luminous ceiling: *Polygal*
Cabinetry: *Laminated Products; William Huber Cabinet Works*
Furnishings: *Teknion, Vitra, ICF, Knoll*
Carpet: *Harbinger*
Resilient flooring: *Forbo*
Lighting: *Duray, Artemide*

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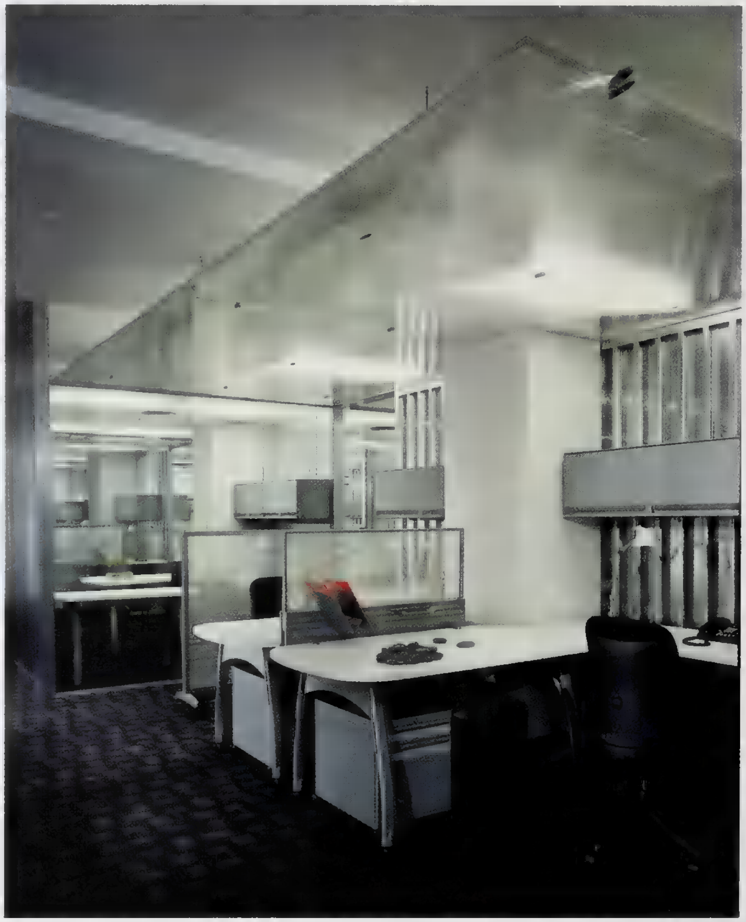
Program

For any architect whose office gets beyond the doors-mounted-on-filing-cabinets stage, much is at stake. An architect's office is a statement about the firm, its aspirations, and the clients it wants to attract. Clients will quickly make judgments as to where you fall on the aesthetic spectrum. Is this a cutting-edge firm, they might ask (as they dodge the lunging desk extension)? Or is it an environment that says, "We're not going to take you anywhere aesthetically that you haven't already been"?

Most satisfying for the designer, one's own office can become an opportunity to explore interests (admit it, obsessions) that would mystify, if not alarm, clients. In new premises for Valerio Dewalt Train's Chicago offices, image making mixes with a near-obsessive concern for inexpensive material wrought beautiful by careful detailing.



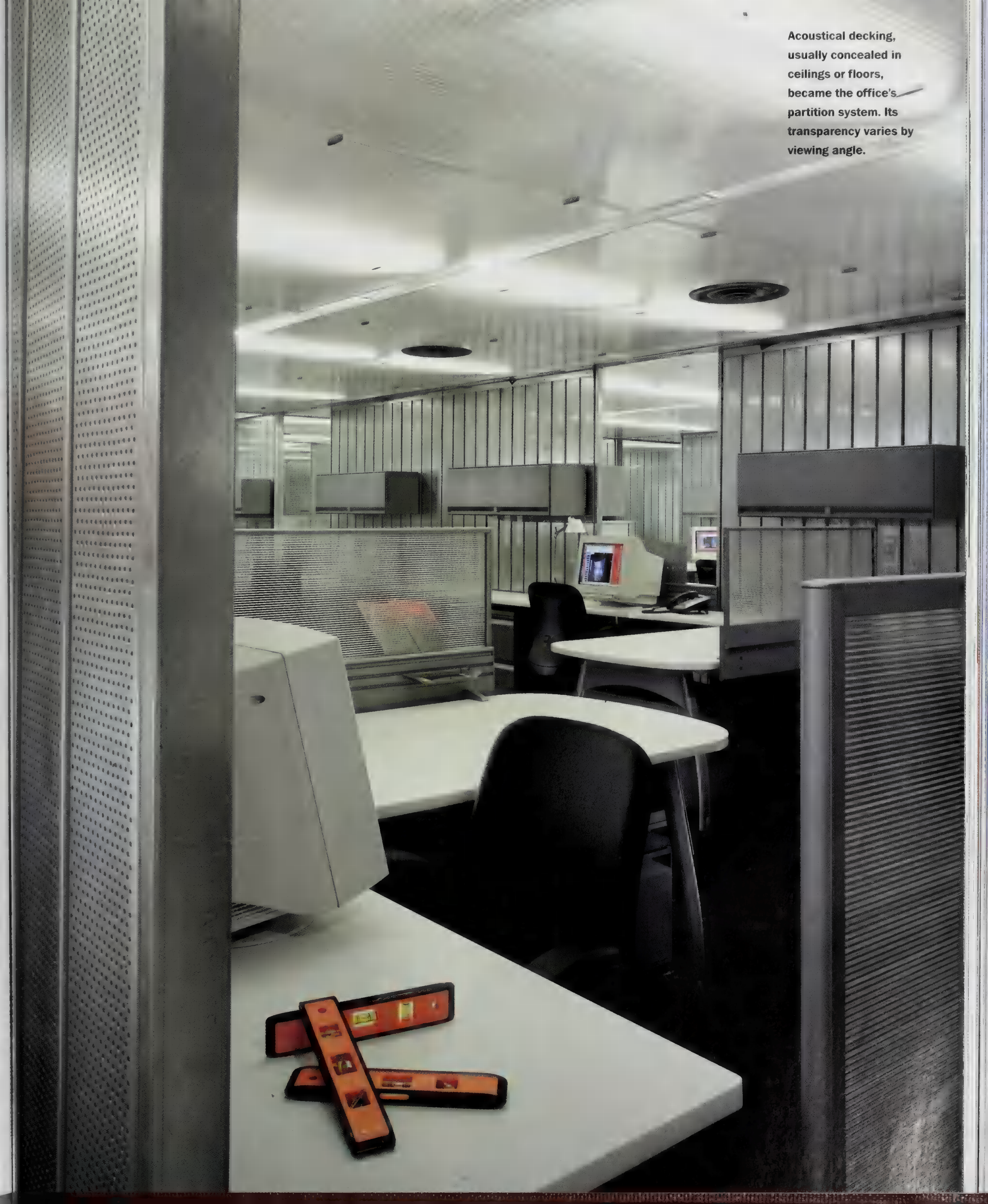
Solution

The image aspect is established dramatically at the entrance, where a flat-screen monitor, deprived of its case, dangles precariously from a rolling, folded-metal panel door. Images of the firm's work flicker across the display's exposed innards. "It's about design and it's about our ability to take something apart and put it back together again," says Joseph Valerio.

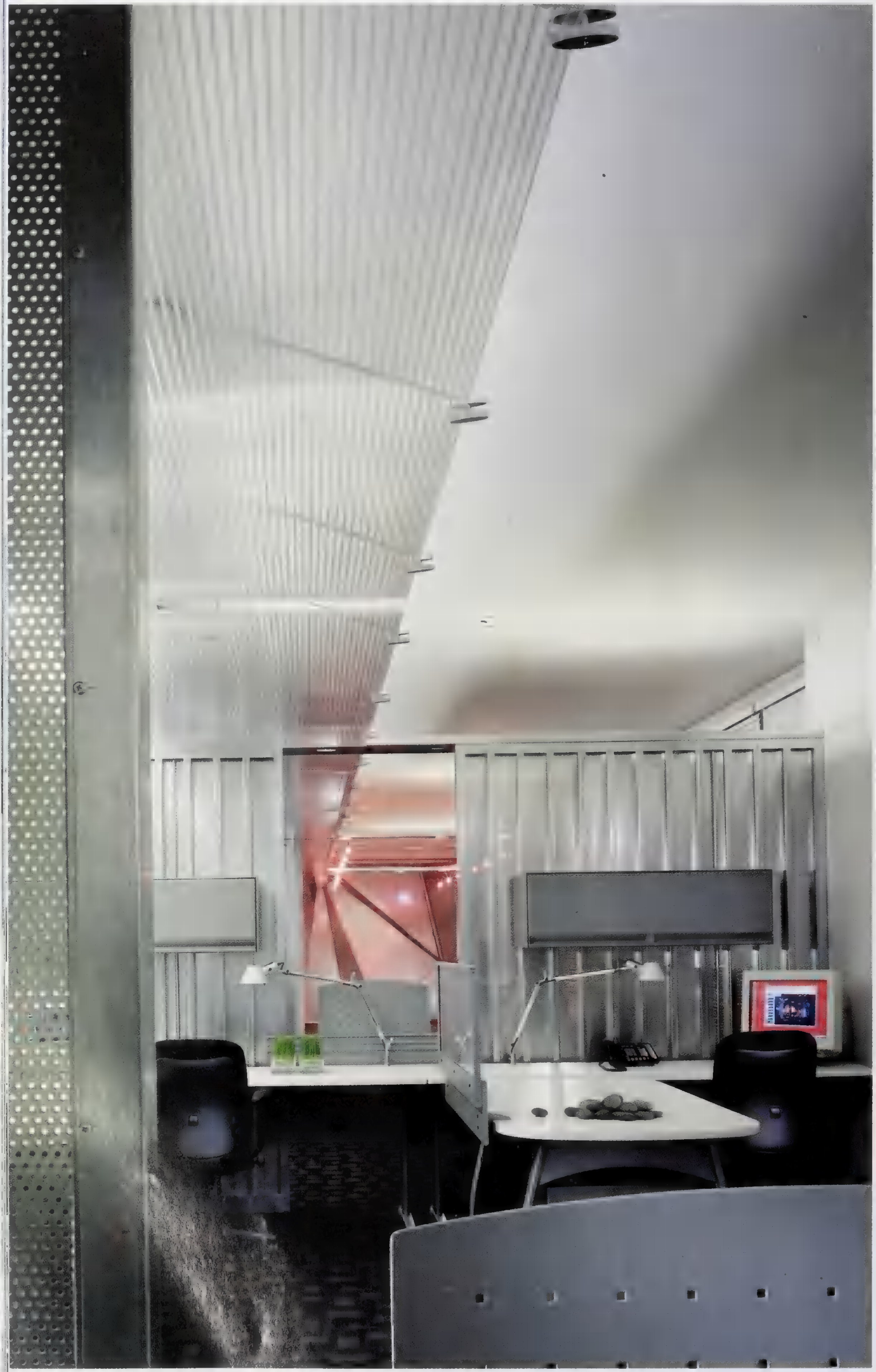
After such a daunting introduction, the actual character of the office is quite different. Shimmering perforated-metal panels define a series of vertical planes. A horizontal surface slides overhead, softly diffusing stripes of light through plastic panels.

The piers are laid out perpendicularly to the path the visitor would take through the space. Allowing the office to reveal itself gradually was quite intentional. "Because these planes are partially transparent as you pass through them," explains Valerio, "you become aware of how we live in the space and use it."

This pavilionlike quality is married to a rigorous plan. The piers and ceiling system are organized on a 16-foot module (aligned to the building's structural grid), forming six semi-enclosed bays (opposite, upper left). The bay system demarcates space



Acoustical decking, usually concealed in ceilings or floors, became the office's partition system. Its transparency varies by viewing angle.



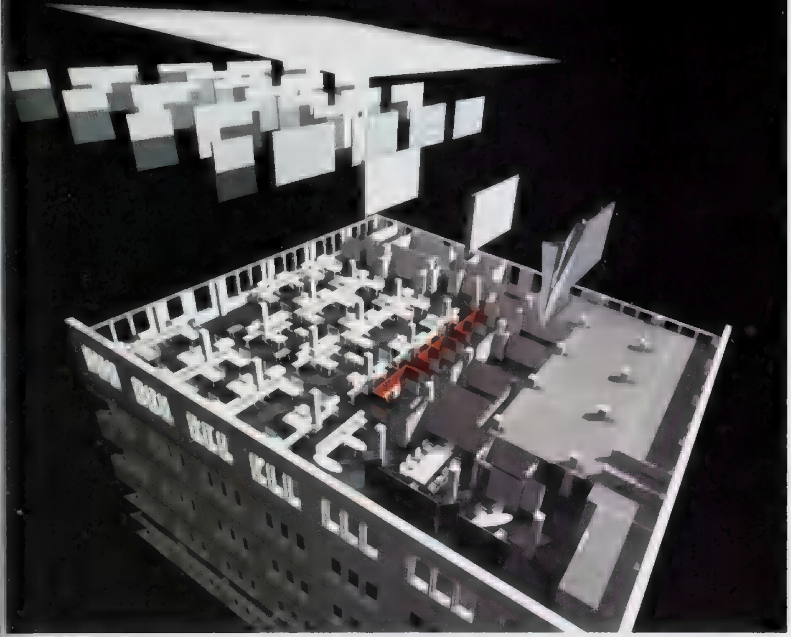
for the firm's typical project teams, which range from two to eight people. At lower densities or for smaller teams, the Teknion benches lining the metal partitions are sufficient. Teams add extra tables as they grow, placing them perpendicular to the partitions.

Materials

It is in the use of materials that the firm's detailing fetish shows itself. Valerio had long experimented with perforated metals as a means to achieve translucency, but he found that the detailing required made an inexpensive material costly. His "Eureka!" moment occurred on a job site when he stood under an acoustical metal floor decking and saw how beautifully its small holes diffused daylight. The conversion to vertical partitions proved inexpensive, and the overlaps in the panel-meeting joints accommodated drops for wiring.

Valerio thinks a great deal about ceilings, too. "Not only do they deserve greater aesthetic attention than they usually get, but they are too complex to construct—they involve too many trades," he says. He simplified a conventional suspended-ceiling system by adapting a standard metal-channel shape (in which lie horizontal wiring runs) to support the translucent-plastic light-diffusing panels. Above the panels, he hung $30 fluorescent tubes. The channels and the lighting are both coordinated to the 16-foot grid spacing. "I wanted the ceiling to be a perceived object," says Valerio. For that reason, he made it lower than would have been necessary just to conceal mechanical ductwork.

Clients today, even architects, often seek more obviously expressive gestures than a gentle play of light or prosaic building necessities that are well organized. "I hope clients recognize that everything is well considered," says Valerio. The response has been gratifying, he reports, even from conservative clients. "They say it's fabulous, but a little too metallic for them." High praise indeed in an era that fixates on spectacle far more than on the handling of panel clips. ■



The luminous plane stops short of the exterior walls (opposite) so that it is perceived as an object floating below the ceiling. Valerio sees the combination of open, semiopen, and closed spaces (private office, below) as reconciling often conflicting needs for seclusion and interaction.

Concrete Media

New York City

3

SPECHT HARPMAN, A FIRM THAT'S GROWN UP WITH THE INTERNET, BUILT AN ENVIRONMENT TUNED TO THE VAGARIES OF DOT-COM HYPERGROWTH.

By James S. Russell, AIA

Architect: *Specht Harpman—Scott Specht, Louise Harpman (project designers); Rosemary Smith (project manager)*
Consultant: *Lilker Associates (MEP)*
Contractor: *Manhattan Business Interiors*

Size: *40,000 square feet*
Completion date: *2000*

Sources
Custom steel entrances and doors: *Bliss Nor-Am*
Custom interior steel glazing, special hardware, and surface: *Millennium Steel*
Fiberglass partitions: *Seal Fiberglass*
Wood cabinetry: *NJS*
Cork wallcovering: *Wicander*
Plastic laminate: *Formica*
Raised access floor: *Tri-State*
Hardware: *Schlage, Stanley, Norton, Maglock*

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Program

Committing to the construction of a new facility entails answering tough questions: Is the company growing too fast? If it fails to build, will it lose valued staff or be unable to take advantage of a major business opportunity?

When explosive growth happens, it is almost impossible to answer these questions definitively. If you don't take more space, you have no place to put anyone. But if you build too much, you're married to crushing fixed costs.

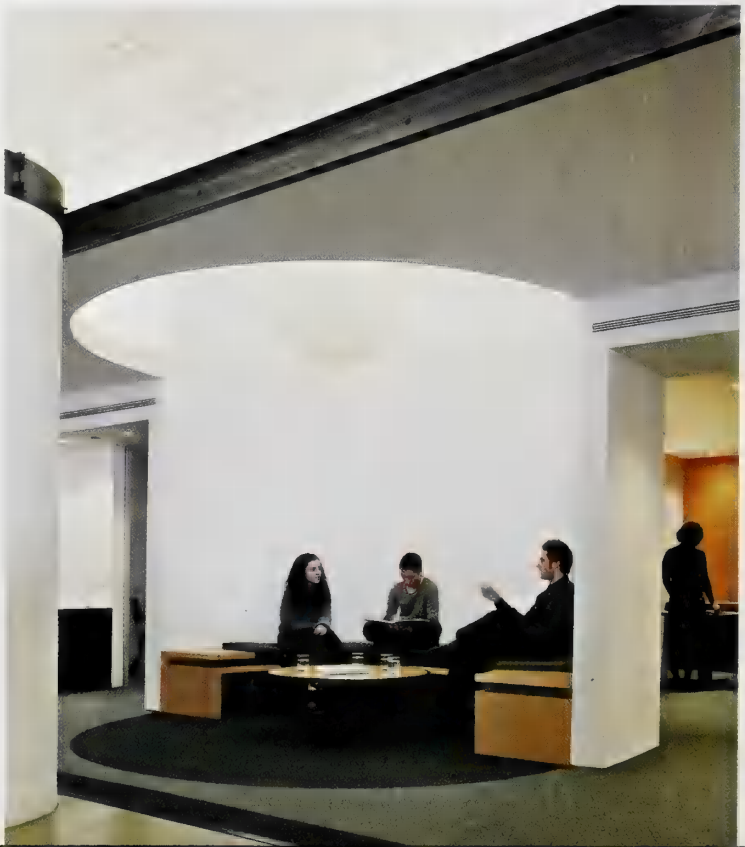
Concrete Media, a Web site developer of Internet-hosting services, bet on growth, moving into 40,000 square feet in the newly fashionable Starrett-Lehigh building, on Manhattan's western edge, in late 2000.

In Specht Harpman, Concrete found a firm that specialized in environments accommodating rapid change, since it has ridden the Internet start-up wave from its infancy way back in 1997.

Given the nature of the business, it is not surprising that the client found its architect on the Web after seeing a couple of small early projects published. They liked what they saw. "They also liked the idea that our firm, too, was a kind of start-up," explains partner Louise Harpman. "They thought we'd understand them."

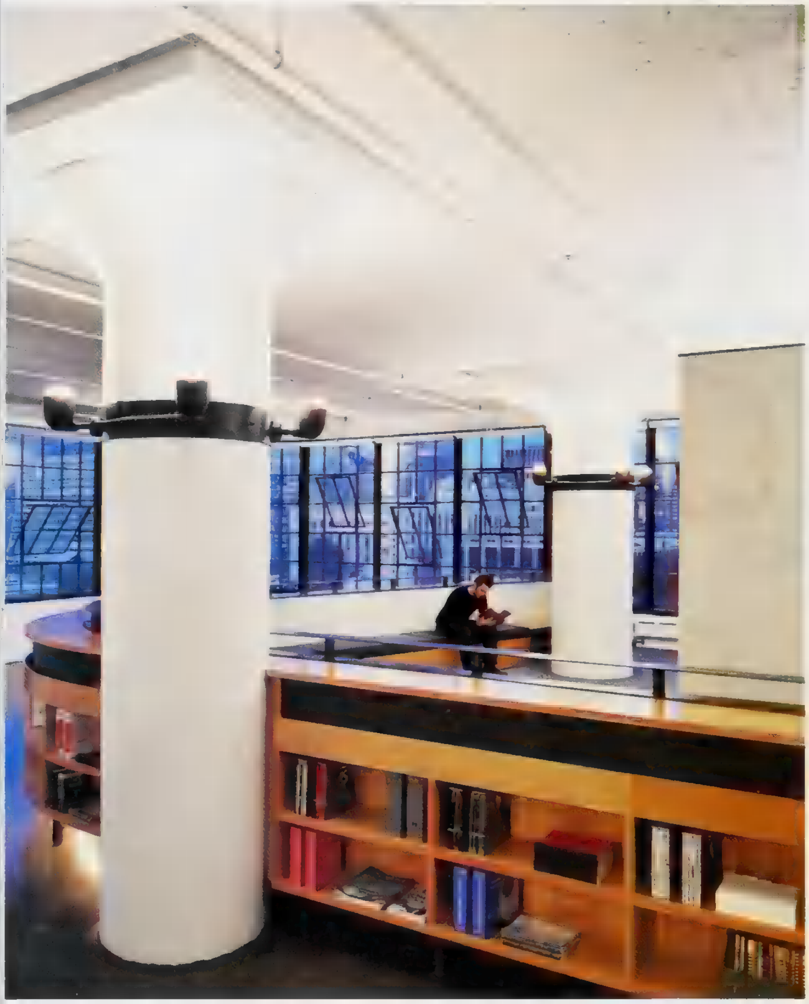
Before venture capitalists started showering nascent Webmeisters with money, Harpman and her partner, Scott Specht, had actually pitched in with screwdrivers and hammers to helped cash-starved early clients construct the spaces they had designed. As a result, they learned to source materials from hardware stores and business-fitting wholesalers. They found it was often cheaper to custom-fabricate desks and partitions from off-the-shelf components than it was to purchase furniture. They found specialty subcontractors who were comfortable making custom-desk supports out of products as prosaic as the wheeled clothing racks that clog Manhattan's gritty Garment District streets.

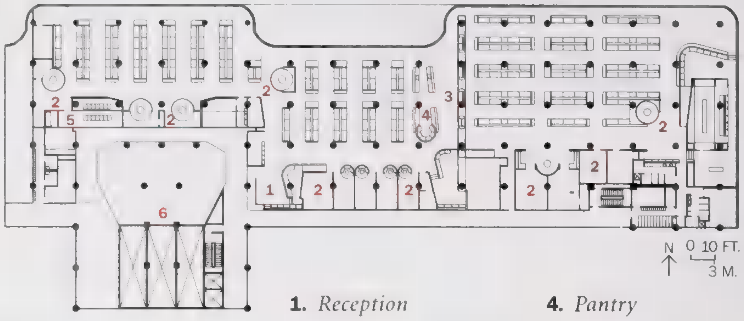
Concrete needed better space because it had long outgrown its premises. It was forced to jam more people into an office suite that had been built for a previous tenant. There was no time to alter that earlier space or rethink it. When a high-ceilinged, light-bathed space became available in the Starrett-Lehigh building, it looked like everything their old office wasn't and could never be.



PHOTOGRAPHY: © MICHAEL MORAN

A wide aisle offers a Main Street through workstations and meeting spaces to the space's largest conference room (above). Milky fiberglass diffuses daylight into tank-shaped meeting spaces (right); other areas can be used at a moment's notice (left).





1. *Reception*
2. *Meeting*
3. *Operable partition*
4. *Pantry*
5. *Servers*
6. *Loading dock*

Solution

The architects zoned the plan from inside to out. They placed most of the varying-sized meeting rooms on a raised platform, and terraced the rows of workstation benches down in two levels to the window walls opening to breathtaking views of the Hudson River.

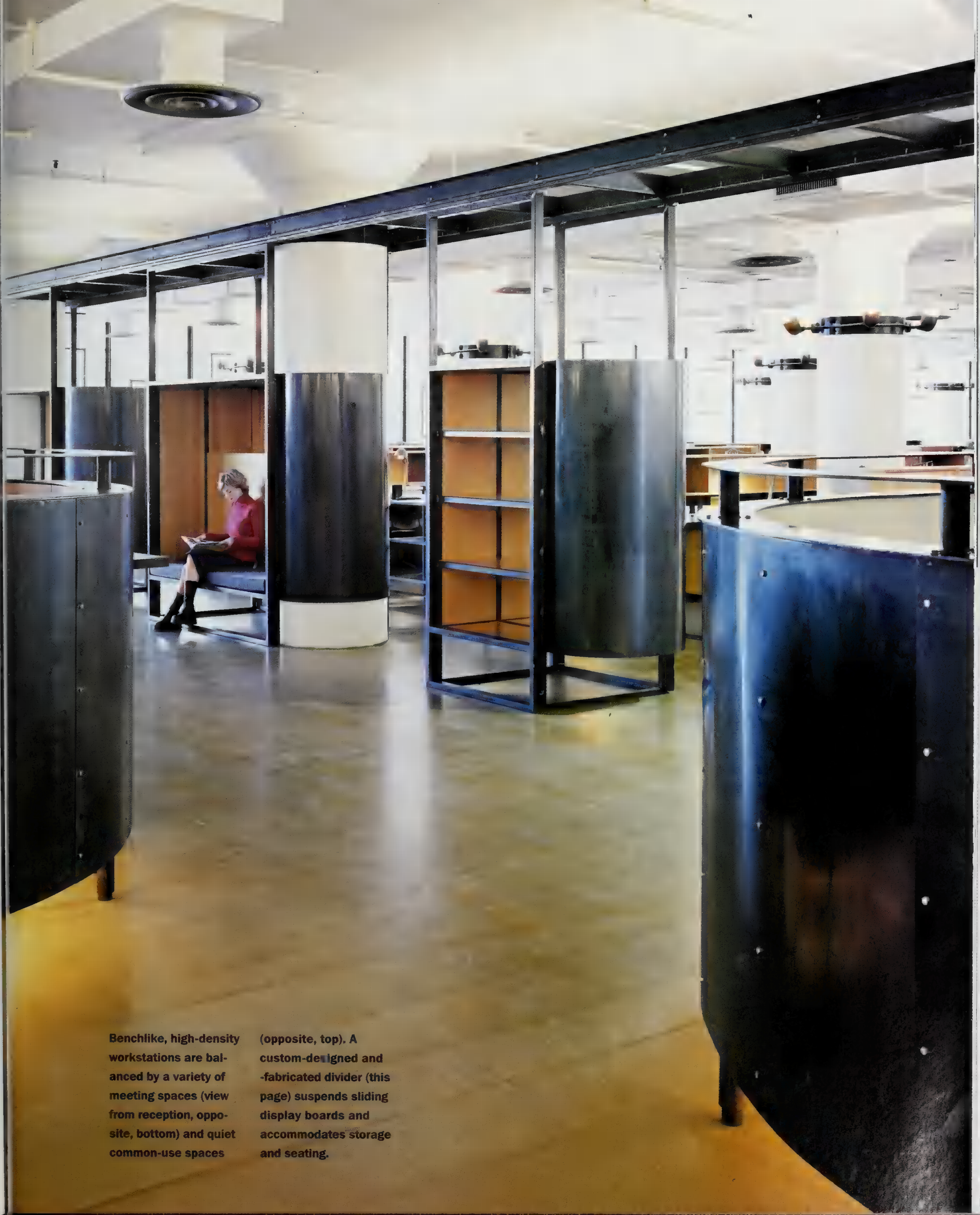
Rather than derive an aesthetic from the company's tech-heavy mission, Specht Harpman took inspiration from the building and its surroundings. In the main conference room's partitions, they picked up the thin-membrane configuration of the 1931 streamlined Moderne building's steel sash (even tracking down the original fabricator, which is still in business). They turned the water towers that form Manhattan's rooftop tankscape into meeting rooms. Only these "think tanks" have been fabricated by Long Island boat makers out of fiberglass, tinted milky "surfboard clear." The fiberglass enclosures were inexpensive to make yet brought the outside light into the meeting spaces.

Commentary

Out of a long-neglected industrial space, the architects teased a workplace that has amenities any company might seek: beautiful light and a pleasing openness. Almost any white-collar endeavor could make good use of the combination of small but well-made workstations and varied spaces for meeting and socializing. "Flux is what it's about," says Scott Specht.

More than Specht or Harpman knew. The adaptability of the design will now be put to an unwelcome test. As this issue went to press, Concrete closed its doors, another casualty of the imploding dot-com economy.

Since Concrete failed, it's fair to question whether it should have committed so much of its precious cash to its facility. There is no definitive answer. The company could just as well have foundered because its former space made it so difficult to manage collaborative projects and instill a corporate culture tuned to product quality and customer service. Both qualities have been conspicuously lacking in the much-touted, junk-food-strewn, rec-room look that too often remains the dot-com paradigm. ■



Benchlike, high-density workstations are balanced by a variety of meeting spaces (view from reception, opposite, bottom) and quiet common-use spaces (opposite, top). A custom-designed and -fabricated divider (this page) suspends sliding display boards and accommodates storage and seating.

Evolve Software
Emeryville, California

4

KAVA MASSIH RETAINED AN OLD FACTORY'S AIRY GRANDEUR AS IT GAVE A GROWING SOFTWARE COMPANY GENEROUS SPACE.

By Lisa Findley

Architect: *Kava Massih Architects—Kava Massih, Gerry Tierney, Kyle Prenzlow, Angelo San Diego, Rasha Habiby, Dimitris Aristidon (project team)*
Consultants: *Simons Structural Engineers; Endres Ware Architect Engineer (structural); Horton-Lees (lighting); Gary L. Strang (landscape)*

Size: *46,000 square feet*
Completion date: *2000*

Sources
Acoustical ceiling: *Tectom (panel); USG-Donn (suspension)*
Paneling: *Plyboo*
Plastic laminate: *Tott Turf*
Flooring: *Armstrong (resilient); Dal Tile (ceramic); Karastan (carpet); Plyboo (wood)*
Lighting: *LSI, Zumtobel, Columbia, Focal Point, Lightolier, Targetti*

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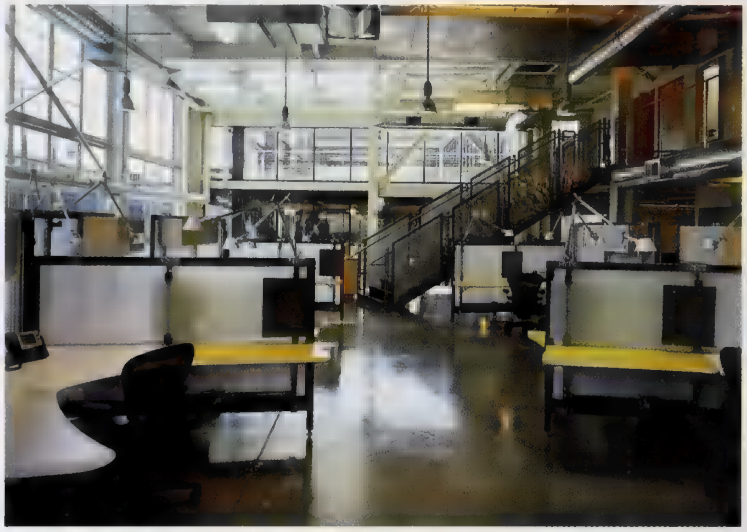
Program

Until the giddy dot-com growth of the last few years, the town of Emeryville, Calif., was an overlooked industrial outpost wedged between Oakland and Berkeley. As rents surged in San Francisco, the ample and low-cost space abandoned by manufacturers, along with Emeryville's position at the first outbound exit off the Bay Bridge, made it a high-tech magnet.

CEO John Bantleman moved Evolve Software to Emeryville in the spring of 2000 for one reason: "luxury of space." The firm's 200 employees had been crammed into cubicles in standard spec-office space. For this developer of business applications, breathing room meant not only a less-crowded environment, but also an ease of informal interaction that has now become de rigueur in fast-moving high-tech firms.

Bantleman chose Emerytech, né the Grove Valve Building. Where once huge fittings were manufactured for the shipbuilding industry, Kava Massih, a five-year-old local firm, had created more than 200,000 square feet of office and retail space for developer Ellis Partners. A high-tech track record and the developer's recommendation was enough for Bantleman, who hired the firm to complete the design.

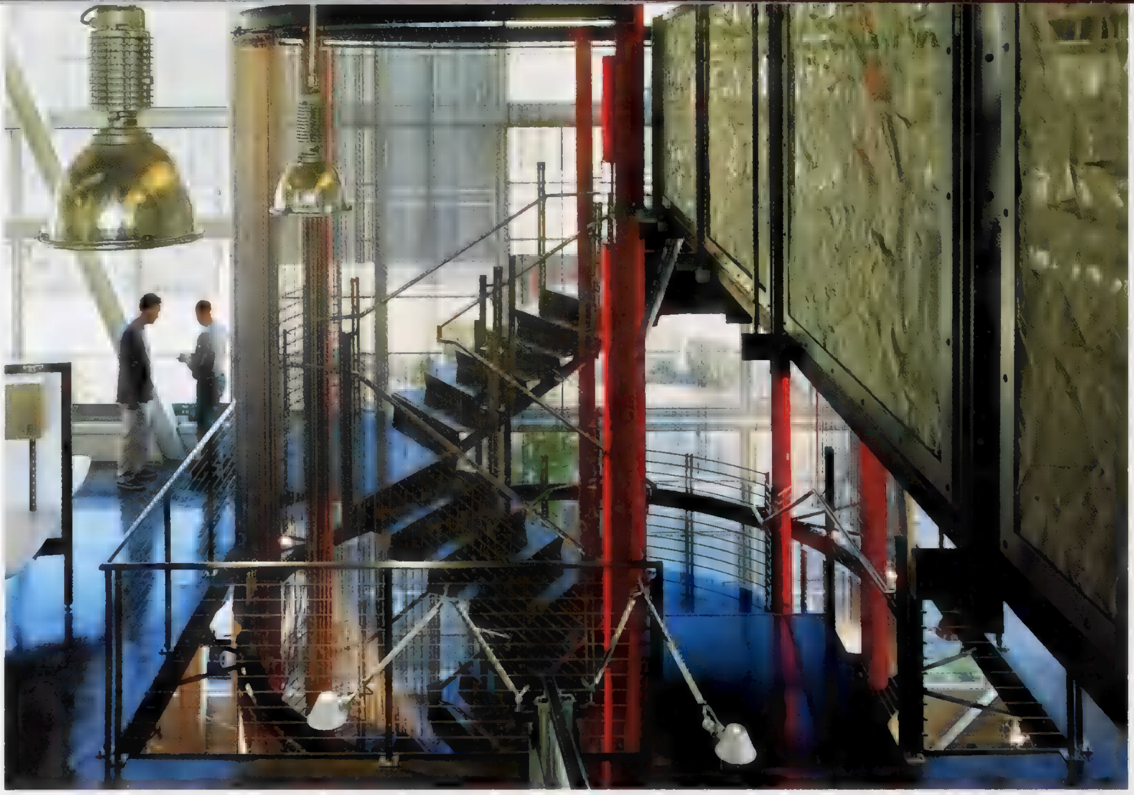


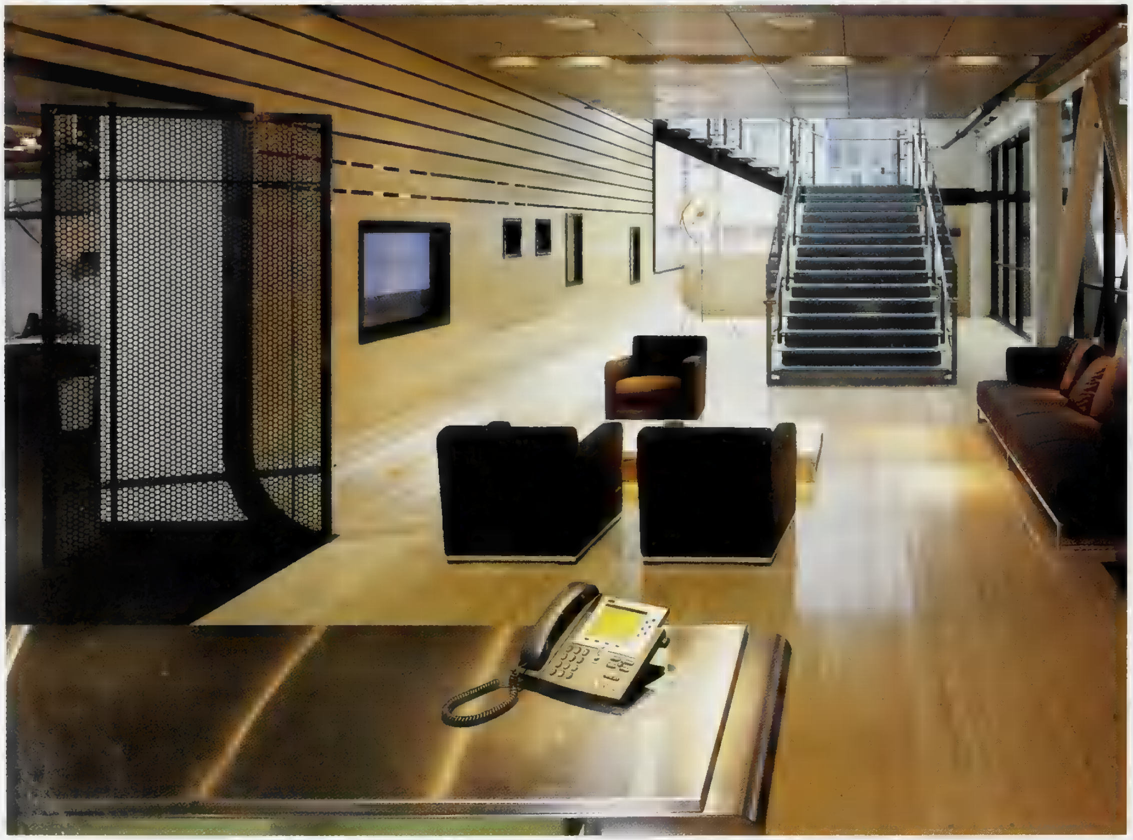
Within an old manufacturing space (left), a glass-treaded stair (opposite) leads to the daylighted main level (above). The stair leads to private offices and meeting rooms on a mezzanine. Desks are custom-made.

Solution

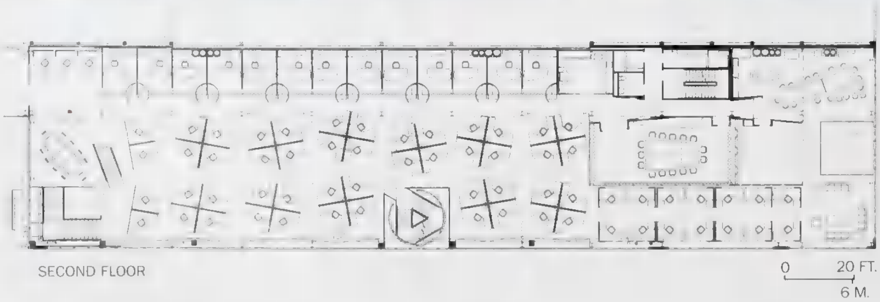
The largest block of Evolve's space, 32,000 square feet, occupies a steel-framed, 300-foot-long former manufacturing bay, wrapped by industrial sash on three sides. Massih's team interpreted Bantleman's desire for spaciousness by inserting only a single full-floor slab in this light-filled rectangle, leaving an 11-foot floor-to-ceiling height on the ground floor. Even this is punctured by generous stair openings. "I wanted to reclaim the light and the immense height of the space wherever I could," says Massih. The second floor opens up

Contributing editor Lisa Findley writes about architecture and design and teaches at the California College of Arts and Crafts.





Fine chain-link mesh drapes a stair to the mezzanine (left), where the crumpled metal of the architect-designed rail resembles an Issey Miyake shirt. Bamboo flooring lines the lobby (bottom).



up to a double height, with a mezzanine containing private offices and meeting rooms hung over about a third of the area.

Materials

Massih diffused the generous daylight with light-reflecting and transmitting materials to keep a sense of openness even in enclosed areas. Combinations of clear and translucent glass or plastic enclose the conference areas. The partitions of the custom-made workstations are also translucent.

Massih credits the skill of Dennis Ludeman, a local steel fabricator who often works with architects, for the elegant execution of metal details (for example, see the stair, opposite). Michael Goldin, a furniture maker, created the workstations.

Commentary

Many new work environments struggle to accommodate a leader's vision of a teamwork-oriented workplace with easy interaction and the staff's desire for privacy and relief from perpetual distraction. Evolve is still discovering where this balance lies. Some midlevel managers fought for enclosed—though glass-doored—offices on the mezzanine, and got them. The engineers and software developers on the main level clamored for greater enclosure of their workstations. Bantleman has agreed, and Goldin has just completed the design.

However, the employees have found the light-filled space inspiring and a welcome change from the warren of cubicles in their old offices. The design has significantly aided hiring. "Recruiters love walking job candidates through the space," says Evolve facilities manager Lauren Lee. "It sells itself." ■

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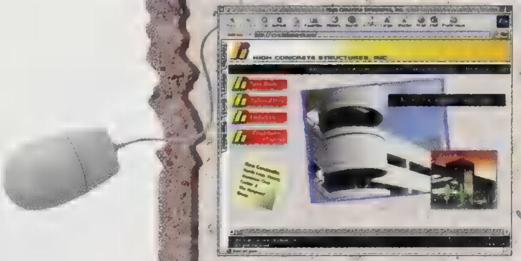

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New Uses for Army Surplus Buildings

AFTER 150 YEARS OF SERVICE TO THE U.S. ARMY, A WATERFRONT FORT IN NEW YORK CITY IS REINCARNATED FOR THE FIRE DEPARTMENT, PARKS DEPARTMENT, AND LOCAL COMMUNITY.

By Robert Vail Cole, AIA

Adaptive reuse of existing buildings is a growing specialty for architects. More firms are adding refurbishment, restoration, and rehabilitation to their repertoires as important areas of expertise. Swanke Hayden Connell, a New York–based architectural firm, has spent 15 years developing a successful methodology for determining feasibility and design strategies, including the much-lauded refurbishment of the Statue of Liberty (1986).

Abandoned for over 25 years and now in a state of decay, the original 1911 army hospital in Queens is slated for rehabilitation and adaptive reuse as classrooms for the FDNY's new training facility.

According to the National Trust for Historic Preservation, over 1.2 million commercial and institutional buildings constructed 40 or more years ago are still in use in the United States today. A significant portion of these buildings need to be rehabilitated in order to remain viable. With increasing frequency, architects are being asked to evaluate the reuse of large facilities and sites that have outlived their original purposes, such as former school campuses, industrial plants, hospital complexes, and military bases. When the buildings, their infrastructures, and their grounds have been well maintained, new owners are often eager to exploit the economic potential of reusing what exists, rather than razing and rebuilding.

At a multiple-buildings scale, this assessment requires a methodical approach to find the best and most viable redevelopment scenario. To analyze an existing complex, architects must identify the original building types and their existing layouts, evaluate each building's overall physical condition, document the condition and capacity of the site's infrastructure, perform a detailed zoning analysis to identify allowable new uses and opportunities for new construction, and finally, create a conceptual program to place new users in a suitable environment. This information is crucial for the cost estimates, which will establish an overall project budget.

Swanke Hayden Connell Architects (SHCA) in New York used this methodology to evaluate the reuse of the historic, Civil War–era Fort Totten in Bayside, Queens, New York. The site comprises 175 acres with 842,000 square feet of facilities in over 145 existing structures that originally housed U.S. Army operations, administration, storage, housing, and military fortifications. Through the Base Realignment and Closure process (BRAC), the federal government's vehicle to consolidate our nation's defense facilities and dispose of the resulting surplus military property, 120 acres of that property and 735,000 square feet of buildings were identified as redundant to army and other military needs.

Fort Totten is a significant example of a confined and controlled community containing all residential, commercial, and recreational facilities necessary to support a civilian and military population. It was historically planned, designed, built, operated, and inhabited under the auspices of a single agency—the United States Army—for nearly 150 years. The history of Fort Totten extends from its establishment in 1857 as a coastal defense site for the New York City harbor through the middle of the 20th century, when it served as the home of the First Regional

Robert Vail Cole, AIA, is senior associate and director of historic preservation at Swanke Hayden Connell Architects in New York.

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/AIA Continuing Education article. To receive credit, turn to page 218 and follow the instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

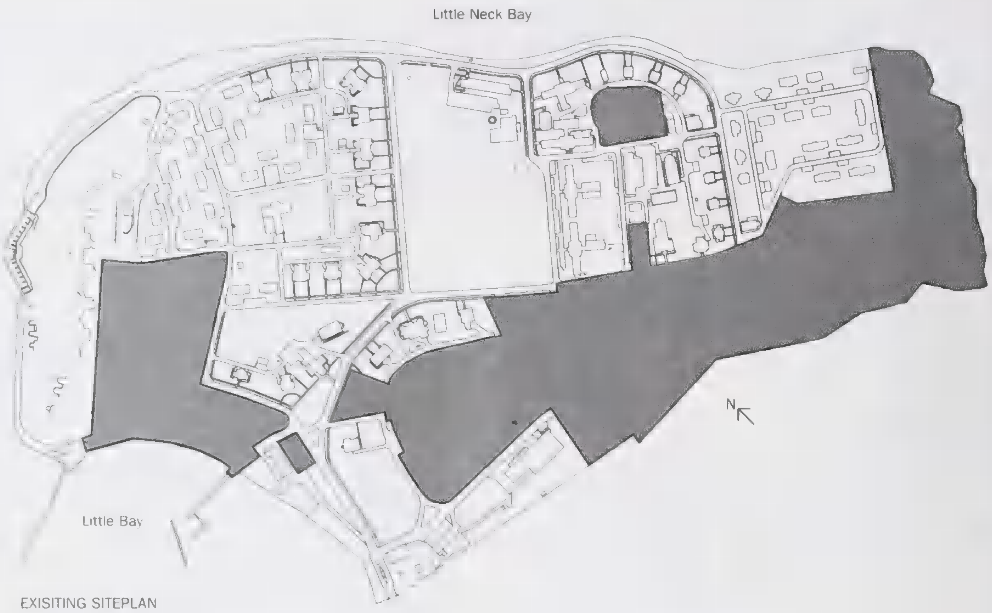
1. Describe how the Fort Totten site will be reused.

2. Explain renovations necessary to reuse this site.

3..Explain how cost estimates were determined for the Fort Totten project.

WWW For this story and more continuing education, as well as links to sources, white papers, and products, go to ***www.architecturalrecord.com***

On the existing site (right), 47 of the 130 buildings will be demolished to make room for public parkland and new construction. This officer's house (below left) is typical of the residences that will be rehabilitated for administrative use, while the gymnasium (below right) is typical of the unique institutional buildings that have been programmed for special uses.



EXISITING SITEPLAN

Army Air Defense Command. The facility conveys the total environment of defense, support, and domestic life that characterized army posts from the mid-19th to the mid-20th centuries.

Because it is one of the rare large development sites remaining within the city limits, the mayor's office joined community leaders to create the Fort Totten Redevelopment Agency (FTRA), charging it with developing a reuse plan and seeking input from various New York City public agencies, private institutions, and developers, as well as the community at large. Three reuse plans were explored: a residential community, a college campus, and the New York City Fire Department (FDNY) training center.

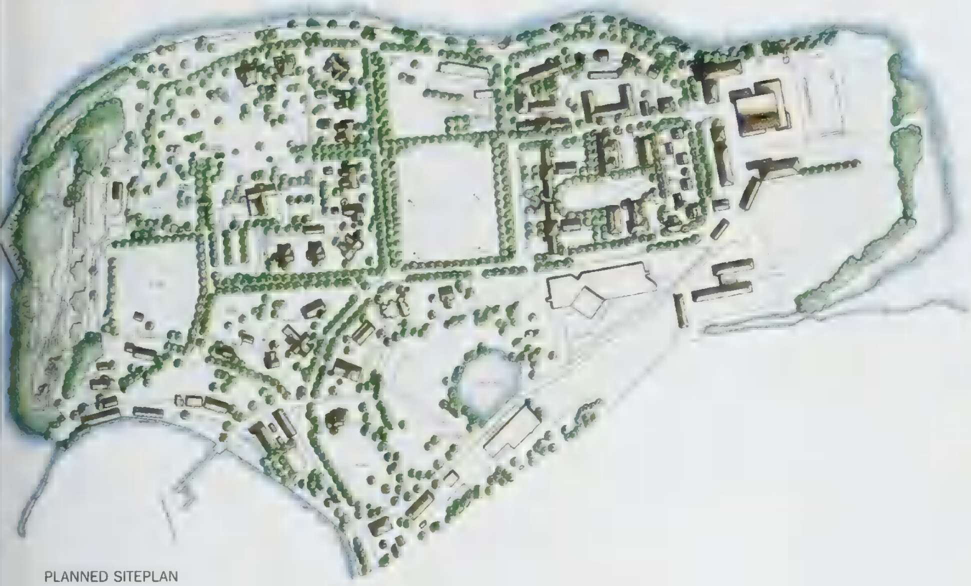
USING A QUESTIONNAIRE, THE TEAM CONDUCTED INTERVIEWS AND COLLECTED INFORMATION TO DEVELOP A DATABASE.

The agency settled on a plan for a multiuse community consisting of a new training facility for the FDNY, 50 acres of new public parkland, designation of specific buildings for not-for-profit use, and a small parks concession. This strategy best addressed neighborhood concerns, provided for public access, fit within the existing site constraints, and had a viable funding source. The other 120 acres of the site, containing 130 structures, were turned over to New York City. Forty-seven of these structures, dating from the 1950s and '60s, have been proposed for demolition to make way for new parkland and potential new construction. The balance of the structures, part of a New York City Historic District, are to be retained, rehabilitated, and reused.

The city retained SHCA and assembled a team of consultants from the New York City Department of Design and Construction to determine the feasibility of adaptively reusing the buildings and the site. At that point, a more detailed, though still conceptual, design analysis could be undertaken.

Existing structures

The team inspected and evaluated each of the existing structures on the site, verifying the original drawings in the field and creating as-built documentation. Building on the work of several previous site-evaluation studies prepared for the army by other consultants, the SHCA team developed condition assessments and repair guidelines. Documentation also extended to the mechanical, electrical, plumbing, and structural


PLANNED SITEPLAN

The Officers' Mess Hall (above) will remain open to the public as the Bayside Historical Society. Barracks building 323 (below left) has yet to undergo rehabilitation and conversion to classrooms similar to that of building 330 (below right).

systems; windows, doors, roofing, exterior wood and masonry assemblies; and interior finishes. The team used a cursory, yet methodical, approach for assessing the potential for repair and rehabilitation versus wholesale replacement. The evaluation took into consideration not only the proposed site infrastructure upgrades but also restrictions due to historic preservation requirements of the New York City Landmarks Preservation Commission.

Infrastructure

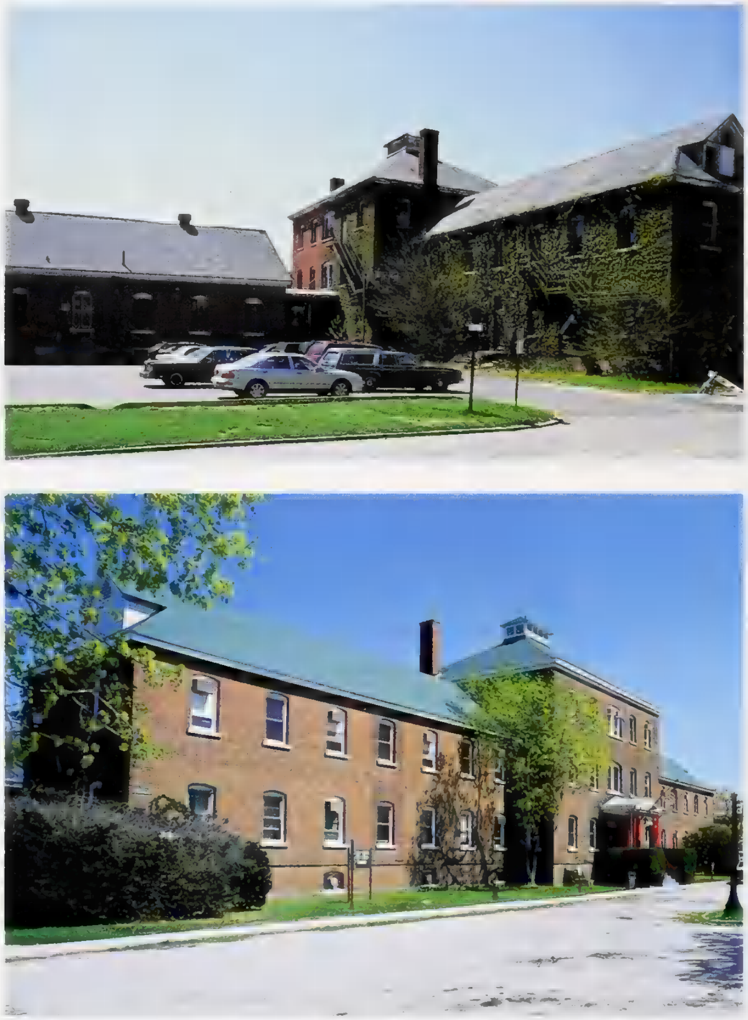
Site surveys and visual inspections throughout the fort revealed the condition and functional aspects of the infrastructure. SHCA also compiled background information from previous studies executed for the army in order to document existing infrastructure conditions on the utility system installations and to compare previous findings with the new data. Discussions with FDNY engineering personnel currently working at Fort Totten yielded additional information.

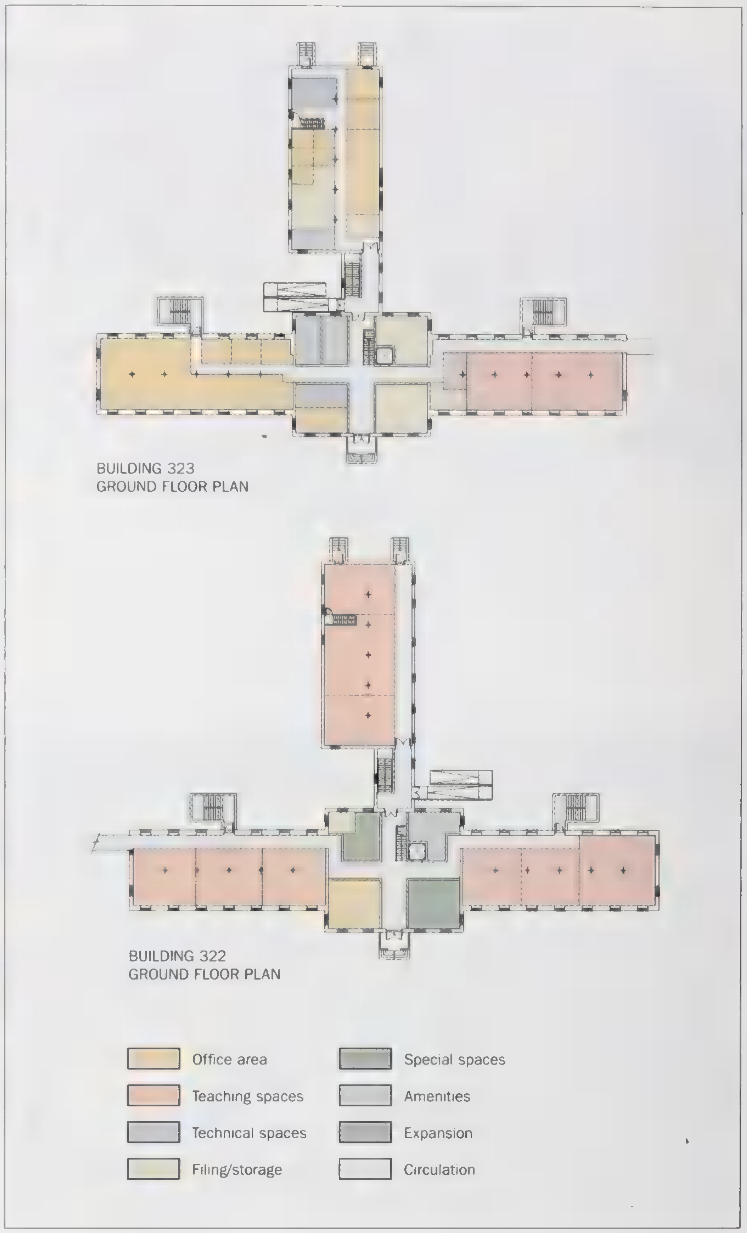
By examining the requirements established in the programming effort, the architects were able to determine that all the major infrastructure systems will ultimately need to be replaced or rehabilitated to support the capacity requirements of the FDNY Training Academy and the Parks Department facilities. This entails a complete replacement of the domestic water-supply system, reconstruction of storm drainage and sanitary sewer systems, upgrading of the site's electric distribution system, and installation of a communications duct and a natural-gas distribution network. Additional parking and designation of a network of public streets will also be required. SHCA designed a network consisting of two loop roads serving double duty as the location for the new site utility mains.

User programming

The development of a Space Requirements Program for the FDNY and Parks Department marked the beginning of the conceptual design effort. The primary objective of this effort was to establish space requirements for and specific characteristics of the facility. Using a questionnaire tailored to the users' needs, the design team conducted interviews and collected information to develop a database. The resulting program was not site-specific, detailing only the spatial planning needs of the users and their projected future requirements.

The FDNY portion of the program includes teaching areas, specialized training areas, administrative space, and mechanical equip-





Blocking plans were prepared to develop conceptual designs for reuse of each building. The large, open dormitories and ample existing rest rooms and circulation spaces in Barracks 322 and 323 were ideal for reuse as central classrooms for the training facility.

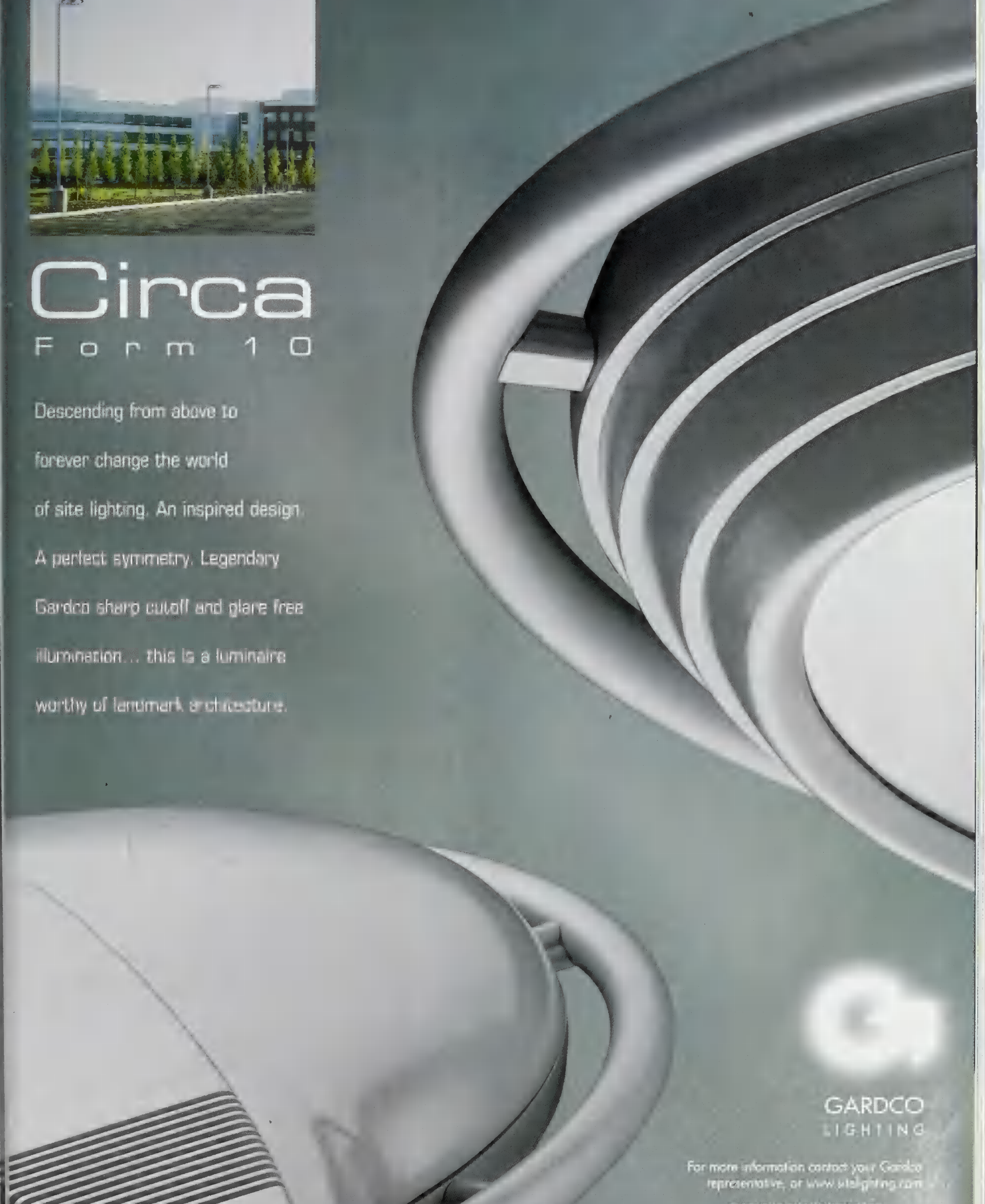
ment space for all of the Fire Department units that might be housed at Fort Totten. The program also responds to the requirements of the Department of Parks and Recreation for recreational areas, comfort stations, maintenance facilities, and administrative space. Eleven not-for-profit buildings were generically programmed since specific user groups had not yet been identified.

The next step was to analyze the overall program for the site with the goal of matching departmental requirements with individual buildings. By providing consolidated, centralized facilities in existing institutional and residential buildings, with rooms sized and configured in accordance with program requirements, the architects could achieve the most efficient reuse. This principle would also give each department an appropriate structure with its own identity and address. Conceptual space blocking was prepared to test the ability of the existing buildings to support new uses.

For example, the two main buildings, Barracks 322 and 323, are scheduled for reuse as the central classroom buildings. Their large, open dormitories are ideal for the required classrooms, and the ample existing rest rooms and circulation spaces will support large assemblies of students. The smaller original supporting rooms are also ideal for reuse as teachers' offices and technical support areas.

The team categorized building types under various renovation scenarios. Coupled with the program assignments and the degree of interior modification that would be required, these scenarios grouped buildings according to the following: exterior architectural conditions, interior architectural conditions, structural conditions, required interior alterations, and requirement for rehabilitation or replacement of existing utilities. The various combinations resulted in nine renovation scenarios, ranging from routine interior and exterior maintenance work to significant exterior restoration work and complete interior remodeling. SHCA prepared detailed cost estimates for one example of each of the nine types, then took the average or typical cost per square foot and extrapolated for all buildings within each scenario type. This formed the basis for the overall cost of rehabilitating all buildings on the site. These square footage costs ranged from approximately 7 percent of the cost of new

THE TEAM CATEGORIZED THE VARIETY OF BUILDING TYPES UNDER DIFFERENT RENOVATION SCENARIOS.



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CIRCLE 67 ON INQUIRY CARD

The army built these masonry structures solidly and maintained them well.

construction for structures requiring only minor exterior rehabilitation and no interior architectural modification to 62 percent of the cost of new construction where significant exterior work and interior gut rehabilitation was necessary. Of course, these percentages do not consider the value added by the existing buildings, which were well constructed and maintained over the years.

The estimated costs for the individual buildings were combined with the costs for upgrading the balance of the site; the composite costs were then used as the basis for determining the overall feasibility of the proposed development. Those cost estimates were also used to secure funding and establish a phasing plan to begin implementation of the project.

DETERMINING THE FEASIBILITY OF ADAPTIVELY REUSING AN ENTIRE ARMY BASE WAS A DAUNTING TASK.

Determining the feasibility of adaptively reusing an entire army base was a daunting task. It was tackled through execution of a methodical series of tasks that, though specific to this project, hold true for any complex of existing structures. Comprehensive conditions and configuration documentation of the site and its individual buildings, married to a program for reuse, should yield a conceptual design sufficient to determine project cost and feasibility. In this instance, the methodology was applied to find a viable new use for an obsolete military compound, one that benefits the federal government, the City of New York, and the community. ■

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

◆ Read the article "New Uses for Army Surplus Buildings" using the learning objectives provided.

◆ Complete the questions below, then check your answers [page 218].

◆ Fill out and submit the AIA/CES education reporting form [page 218] or file the form on ARCHITECTURAL RECORD's Web site at www.architecturalrecord.com to receive one AIA learning unit.

QUESTIONS

1. What was involved in the analysis of the existing complex?

2. How will the Fort Totten site be reused?

3. What work will need to be done to the Fort Totten site to adapt it for reuse?

4. How did the architects determine which buildings would house the various departments and activities?

5. How was the cost of building rehabilitation estimated?

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CIRCLE 69 ON INQUIRY CARD

Tech Brief

A tower in Scotland seems to defy the laws of physics

Rising 462 feet on a river quay, it looks like a radar antenna for guiding extraterrestrial pilots safely to Scotland. In actuality, this graceful reed-thin projection is an observation tower on the south bank of the River Clyde in Glasgow. It's also a marker for the recently completed Glasgow Science Center, designed by Building Design Partnership (BDP). The $118 million complex includes three components: a 350-seat IMAX theater; a titanium-clad, crescent-shaped science center; and the tower. A viewing cabin sits at the 330-foot mark. On a clear day, visitors can see 20 miles in any direction, but the real marvel is that a thin 462-foot tower will be the first one in the world to rotate 360 degrees from the ground up into prevailing winds.

Architect Richard Horden and engineer Peter Heppel originally won the competition, funded by a grant from the UK Millennium Fund, in 1992. In 1994, they joined with Buro Happold to develop a proof of concept study and create a scheme.

First of all, there's the wow factor. The slender tower on a peninsula will be greatly affected by the wind, especially at the top, causing movement of the cabin, which, in turn, could cause viewers to experience motion sickness. By drawing heavily on computational fluid dynamics (CFD) programming, the engineers created a deceptively delicate vertical projection. While it appears to defy the laws of physics, it actually serves as a three-dimensional rendering of the principles of aerodynamics.

Designing the pieces

The tower's main steel shaft has three components: Two airfoil-shaped outriggers and the nose of the stair tower form a triangle in plan and provide the primary structure. They are all linked by diagonal bracing. The outriggers at the sides control air flow and prevent oscillations from vortex shedding (turbulence). They are made of curved steel plate with internal webs. The stair shaft is fabricated from triangular, tubular steel sections clad in painted aluminum to reduce the overall weight. It is fully braced to provide torsional stiffness and strength. The tail section at the rear of the airfoils is not structural but helps balance the tower aerodynamically.

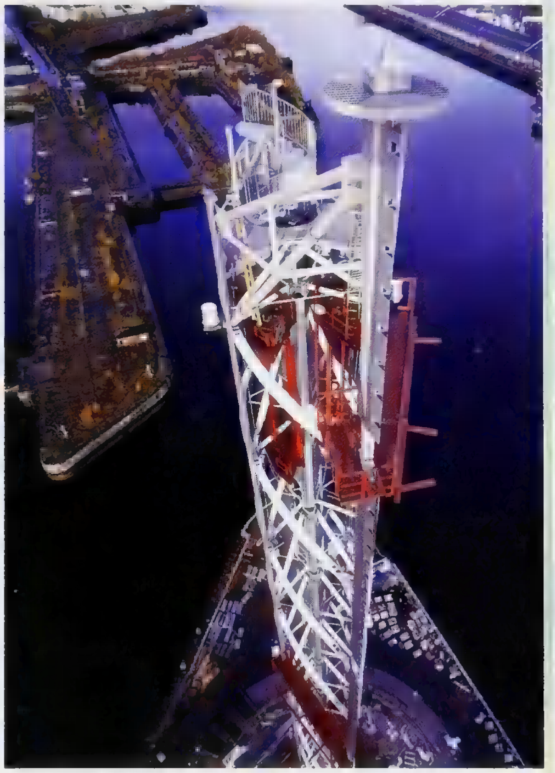
The base consists of a circular, reinforced-concrete bearing ring, 35 feet in diameter, supported by a steel-plate rim. Twenty-four roller bearings mounted on carriages move along the rim. The rollers are mounted on rubber springs, which accommodate errors in the ring and provide dampening. Below the disk, the root structure tapers to a point and is supported by a thrust bearing, which carries the vertical load and a roller bearing, which takes the horizontal loads from the overturning moments. As the diameter of the root structure tapers, the thickness of the steel increases. The bottom 10 feet are solid steel casing. The root structure, the bearings, and the turning systems are contained in a 40-foot-diameter reinforced concrete chamber that extends 65 feet below grade.

Slowly it turns

The tower turns to meet prevailing winds by means of four electric motors driving sprockets, which drive a pinwheel fixed under the bearing ring. The motors are fixed below four of the rollers and move with them, so the relationship with the pinwheel is maintained when the rubber springs allow the ring to deflect. The rotation drive turns the tower from 180 degrees to 45 degrees at a rate of 90 degrees per minute. The wind also helps the rotation, so power requirements are quite small.

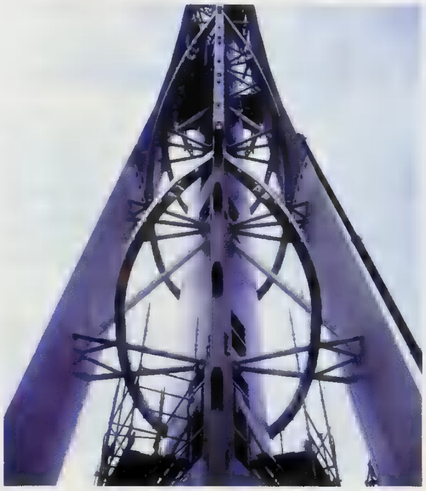
Getting to the top

Two Alimak elevators will take visitors to the viewing cabin. Alimak, located in Northamptonshire, England, makes rack-and-pinion lifts used widely in the construction, mining, chemical, power, and offshore industries. The cabin resembles the passenger carriage of a helicopter and is made from glass-reinforced composite and mounted on a steel chassis at the top of the shaft.



The Glasgow Science Center tower rises to 462 feet, with a viewing cabin at the 330-foot mark.

Buffeting of the tower is caused by fluctuations in wind velocity and direction. Wind-tunnel simulations determined that buffeting could cause the tower to deflect unsteadily, causing dynamic accelerations, which would be felt by visitors. The engineers settled on a criterion that accepted a maximum frequency similar to a fair or subway ride. However, studies show that while people accept movement in transportation, movement in buildings is disturbing. Buro Happold advised the client that there will probably be six days a year in which the tower will have to be closed due to high winds.



Two airfoils flank a central tower shaft.

Making it happen

Because the project had so many special conditions, the overall construction management was awarded to Carillion Ltd. Individual packages, including steel work and mechanical systems, were bid separately, with Carillion constructing the foundations and concrete work. The tower opens to the public this month. Images of the entire science center and ongoing activities can be viewed at www.gsc.org.uk. *Sara Hart*

USG presents

A COMPARATIVE GUIDE: UNDERSTANDING AND SPECIFYING ABUSE-RESISTANT WALL SYSTEMS

by: Brian Golden
Director, Marketing
USG Corporation

IT USED TO BE THAT WHEN HIGHLY DURABLE WALLS WERE DESIGNED FOR buildings such as schools, community centers or correctional institutions, cement masonry units (CMUs), cast concrete and three-coat gypsum plaster were the only viable options. While those construction methods certainly remain sound choices for some building applications, architects have far more abuse-resistant (AR) alternatives today than ever before.

Abuse resistance has evolved from a product focus (masonry, plaster) to a systems approach encompassing the entire wall construction. Today's AR systems include every construction component, from framing to finishing and decorating materials. They not only ensure that a structure's interior walls will resist damage and remain secure, but accommodate many other design and construction considerations. From reducing installation time to performance flexibility, greater aesthetics, and improved maintenance and life-cycle costs, the right AR system will meet a particular building's needs better than any one product can.

AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION Series

Use the learning objectives below to focus your study as you read **A COMPARATIVE GUIDE: UNDERSTANDING AND SPECIFYING ABUSE-RESISTANT WALL SYSTEMS.** To earn one AIA/CES Learning Unit including one hour of health safety credit, answer the questions on page 178 and follow the reporting instructions on page 218. Or, use the Continuing Education self report form located at www.architecturalrecord.com.

LEARNING OBJECTIVES:

- Define abuse resistance in terms of three categories: surface damage, penetration and security.
- Compare the benefits of masonry and AR wall systems.
- Discuss abuse-resistance testing.
- Explain the components that make up abuse-resistant wall systems.

DEFINING ABUSE RESISTANCE

Before specifying a system, it is helpful to know what is meant by "abuse resistance." Although many manufacturers call products "abuse resistant," there is no industrywide definition for this concept or formal test methods by which to measure it. The American Society for Testing and Materials (ASTM) is in the initial stages of reviewing various test methods to measure abuse resistance, but until standards are established, specifiers have only the data from individual manufacturers to rely upon.

Most manufacturers strive to define abuse resistance in the same general way, but modifications to the current ASTM tests during the marketing of products make consistent comparisons difficult. When reviewing manufacturers' AR test data and product information, architects should ask:

- Are companies using current ASTM tests to measure their own products' performance?
- Do their tests represent the real-world conditions I anticipate in my project?

So what does "abuse resistance" mean? At the most fundamental level, abuse resistance can be defined generally as the ability of a wall to resist three primary types of harm:

SURFACE DAMAGE — Abrasion (scratching and gouging) or indentation (denting) of the wall face caused by ordinary contact with people or objects under heavy, but normal, use for a particular building. This damage is mainly aesthetically unattractive. A test that accurately replicates abrasion on AR products is the granual embedment test, where a weighted steel brush is cycled over a product sample until a measurable level of damage is observed. For indentation testing, the Universal Impact Tester replicates typical denting with a rounded punch.

PENETRATION — Impacts that penetrate the wall surface and enter the wall cavity causing damage such as holes or cracks that are unsightly, costly to repair and potentially dangerous. Hard-body impacts result from direct, concentrated contact with a tool or other hard object; soft-body impacts result from bodily contact with a building's human occupants. A Swinging Ram Impact Penetration apparatus is an excellent tool for testing penetration, for it tests both hard- and soft-body impact in a way that replicates real-life conditions.

SECURITY BREACHES — Forced entry or escape that causes significant wall damage or destruction and breaches the safety of a high-security building. The U.S. Department of State has the most stringent forced-entry tests.

Damaged walls can occur in any building, of course, but are commonly found in the following types of facilities:

INSTITUTIONAL	COMMERCIAL	RESIDENTIAL
Education	Hotels	Multifamily
Health Care	Restaurants	High-Rise Public Housing
Life Care	Stores	
Detention	Shopping Malls	
Government	Airports	
Museums	Banks	

Surface damage is typically found, for example, on the walls of offices, hotel lobbies, restaurant dining rooms and medical clinic waiting rooms, among many other locations. It's caused by repeated contact with passersby, luggage, food or mail carts, vacuum cleaners, furniture, etc.

Penetration-type damage is typically found on the walls of hospital corridors or emergency rooms, high school gymnasiums and locker rooms, an apartment building's common hallways or a loading dock, among other heavily used places. It's often caused by impacts from gurneys or other equipment, or strikes from a tool such as a hammer.

Damage from security breaches is usually a concern for buildings where it is important to prevent someone from deliberately and completely breaking through a wall. Examples could include prisons, military installations, embassies, art museums and bank or jewelry-store vaults.

Once architects are clear about the types of buildings typically needing AR systems and the level of damage that usually occurs in various areas of those facilities, they should consider the following issues related to their project:

- DESIGN REQUIREMENTS. Would AR systems incorporating framed walls be more desirable to accommodate electrical and plumbing lines, as well as telecommunications and computer cables? Will weight and space limits require lighter, thinner walls? Will the spaces likely be remodeled in the future, requiring the relocation of walls?
- FIRE AND ACOUSTICS STANDARDS. AR systems offer fire resistance and sound control to varying degrees, depending on their components. Select the system that best meets specific project concerns.
- CONSTRUCTION VERSUS LIFE-CYCLE COSTS. While the tendency to focus on the initial cost of materials is a heavily weighed factor, specifiers should consider all the benefits an abuse-resistant system provides over the long term, including its design flexibility and ease of maintenance. Unexpected factors can come into play here: panel-based systems, for example, are much more easily altered or moved and are much easier to repair than masonry, which can be damaged and is difficult to repair to an aesthetically pleasing appearance.
- AVAILABLE LABOR. The lack of certain tradesmen in some regions may preclude the specification and use of plaster-based AR systems, but could leave open the option to use engineered panel systems that drywall installers and finishers could complete.
- AESTHETICS. While the surfaces of CMUs and cast concrete may be acceptable in some environments, AR systems that produce a smoother, more monolithic surface may be required or more desirable for certain projects.

COMPARING AR MATERIALS

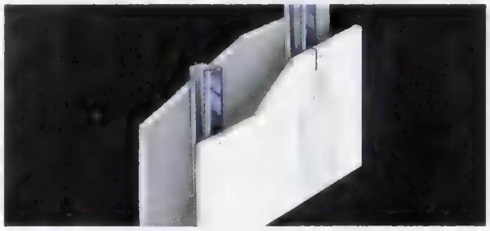
Viewing abuse resistance as a design consideration gives the specifier flexibility in tailoring the application to meet varying client needs. Understanding how various materials perform aids in choosing the right AR system for a particular client.

Masonry has been widely used for years to construct abuse-resistant walls. While it resists all three types of damage, masonry is not immune to abuse and may pose certain construction and maintenance challenges. Compared to various partition-wall systems, masonry also weighs considerably more and occupies more space. All of these factors reinforce the need to view abuse resistance in terms of the structure, the spaces within and their intended use.

Partition-wall AR systems are composed of one or more materials to achieve light-to-extreme levels of abuse resistance. Abuse-resistant drywall, engineered panels (such as gypsum wood fiber panels), veneer plaster, and conventional plaster and lath are the products most commonly specified for abuse resistance. Veneer plasters (the harder the plaster the better), engineered panels without face paper or laminate-faced panels combat abrasion best. Indentations are avoided with systems that incorporate panels with increased core or surface hardness. Penetration resistance is achieved by adding mass (usually through using layers of panels) or by using panels with improved core strengths or a reinforced backing of Lexan® (a polycarbonate material) or mesh.

A weighted swinging ram replicates "real-world" conditions by simulating the direct-concentrated impact of a tool or hard object against a wall system.

ABUSE-RESISTANT SYSTEMS



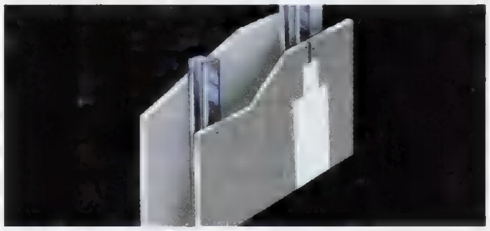
LIGHT-DUTY UPGRADE

Abuse-resistant gypsum panels provide a light-duty upgrade for surface damage and penetration resistance.

System components:

$^{5}/_{8}$" Type X paper-faced abuse-resistant gypsum panel, setting-type joint compound, paper tape; minimum $2^{1}/_{2}$" 20 ga. metal framing spaced 16" o.c. maximum.

Provides 1-hour fire-resistance rating.



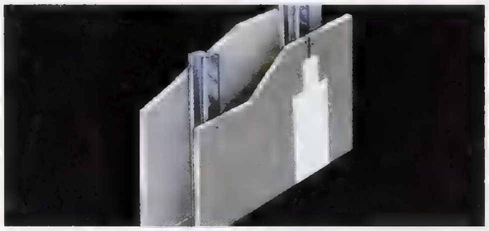
LIGHT- TO MODERATE-DUTY UPGRADE

Engineered gypsum fiber panels provide a light- to moderate-duty upgrade for surface damage and penetration resistance.

System components:

$^{5}/_{8}$" Type FRX engineered gypsum fiber panel, setting-type joint compound, paper tape; minimum $2^{1}/_{2}$" 20 ga. metal framing spaced 16" o.c. maximum.

Provides 1-hour fire-resistance rating.



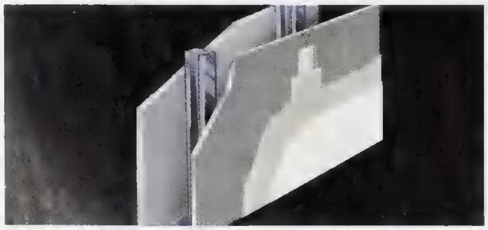
MODERATE- TO HEAVY-DUTY UPGRADE

Engineered gypsum fiber panels with mesh reinforcement provide a moderate- to heavy-duty upgrade for surface damage and penetration resistance.

System components:

$^{5}/_{8}$" Type FRX engineered gypsum fiber panel with mesh reinforcement on back, setting-type joint compound, paper tape; minimum $2^{1}/_{2}$" 20 ga. metal framing spaced 16" o.c. maximum.

Provides 1-hour fire-resistance rating.



HEAVY-DUTY UPGRADE

High-impact-resistant engineered gypsum fiber panels covered with high-strength veneer plaster basecoat and finish provide a heavy-duty upgrade for surface damage and penetration resistance.

System components:

$^{5}/_{8}$" Type FRX engineered gypsum fiber panel, setting-type joint compound, paper tape, high-strength gypsum veneer basecoat plaster (3,000 psi), high-strength non-lime gypsum finish plaster (3,000 psi); minimum $2^{1}/_{2}$" 20 ga. metal framing spaced 16" o.c. maximum.

SPECIFYING SYSTEMS

When looking at a structure and the spaces within, defining a building's intended use and prioritizing its AR characteristics will lead naturally into the specification process. Given recent revolutionary changes in the technology of abuse-resistant products and systems, including the latest wood fiber engineered panels, architects have more flexibility than ever before in choosing a system that will perform well for a specific project.

In the case of light-duty applications such as retail public spaces and primary grade classrooms, a variety of $^{1}/_{2}$-inch abuse-resistant drywall panels is available. They offer increased resistance to surface abuse and impact for just cents more per square foot over standard $^{5}/_{8}$-inch drywall and still require joint treatment finishing only. Engineered wood fiber panels in $^{1}/_{2}$-inch and $^{5}/_{8}$-inch thicknesses go up much like drywall, require joint-treatment finishing only and offer even more surface and penetration protection for light-duty applications. Finishing certain AR panels with a one-coat veneer plaster also offers an upgraded, smoother surface and slightly more abrasion and penetration protection in this category.

Moderate-duty systems are appropriate for stairwells, common areas of multifamily housing and high school classrooms, for example. They provide moderate resistance to incidental impact and abrasion at a slightly higher cost than light-duty systems. For walls finished with joint treatment only, $^{5}/_{8}$-inch wood fiber panels designed for very high impact provide markedly more penetration resistance than comparable options at this level. Other moderate-duty systems include AR panels finished with one- or two-coat veneer plaster, the latter providing significantly more resistance to abrasion.

For heavily used areas such as dormitories, health care facility corridors and loading docks, walls must resist intentional and heavy surface and impact damage. Two-coat veneer plaster systems over very high impact wood fiber panels or two layers of AR drywall panels and an AR veneer plaster face will provide substantial abrasion, indentation and penetration resistance for $1^{1}/_{2}$ to two times the cost of standard drywall. Again, assessing the type of heavy-duty use allows specifiers the freedom to tailor an AR assembly to meet the project requirements.

For the most demanding applications — security-related facilities such as jails, currency exchanges and art galleries — AR systems that incorporate specially formed steel sheets and high-strength plasters provide greater penetration and abrasion resistance than 8-inch core-filled CMUs. This type of AR system also supports the weight of wall-mounted sinks and beds, as well as heavy artwork and shelving. Additionally, these systems can weigh nearly one-third of what CMU walls do and take up less than half the space, which are important considerations in buildings with multiple floors or smaller rooms. At the point when these systems' steel sheets are erected, the walls also allow for easier installation of plumbing and electrical lines, much like cavity stud partitions. As a result, they indirectly reduce costs for plumbing and electrical installation.

THE FINISHING TOUCH

The desired level of finish also may help dictate the type of AR system chosen for a project. The corridors of a correctional facility or school, for example, may require only the most basic of finishes. However, the abuse-resistant walls of an office building lobby or retail store may require a more highly polished look.

Paint or various coatings can decorate masonry walls, but will not provide a smoothly finished surface. Plaster-and-lath systems provide a monolithic surface that is then painted.

Panelized systems can be finished to a high level with paint, veneer plaster or wallcoverings for a more sophisticated look.

A WORD ABOUT CEILINGS

Architects should not overlook their projects' ceilings when considering abuse resistance. From students impaling pencils in ceiling panels to accidental damage done by maintenance crews, ceilings can be subject to scratches, dents and penetrations just like walls. Drywall is usually the best choice for designing abuse-resistant ceilings. It is typically attached using traditional furring methods or via engineered suspension systems. For smaller areas, gypsum board panels also can be installed directly to metal studs. However, drywall may not provide the access or sound control desired.

For suspended ceiling systems, the most durable panels are cast products, which are formed and cured in a mold. They are harder and resist damage better than standard acoustical panels. And since their color is uniform throughout the panel, rather than simply painted on the surface, nicks are less visible. Cast-manufactured products are available in a variety of patterns.

CASE STUDIES

SCHOOL OPTS FOR WOOD FIBER PANELS OVER CMUS

When architect Spencer Armour of Memphis-based Braganza Associates P.C. designed the Sacred Heart Catholic School in Southaven, Miss., he knew the 55,000-square-foot project required abuse-resistant walls, but needed to contain costs and allow for future room configurations as well. So, instead of using concrete block, he opted for FIBEROCK® Brand Abuse-Resistant Panels from USG Corporation. They provided the necessary durability for the gymnasium, corridor and cafeteria walls, and created movable wall partitions with a monolithic appearance. "Most importantly, the square-foot cost of using FIBEROCK was at least half the cost of building with concrete block," said Armour.

SECURITY WALL SYSTEM IS JUDICIOUS CHOICE

Walls that stand up to forced entry and ballistics were crucial for a new criminal courts building in the Broward County Judicial Complex in Fort Lauderdale, Fla., especially for the holding cells and passageways. Project designer Carlos Marciales of Michael A. Shift & Associates, Inc., (Fort Lauderdale) chose the STRUCTOCORE™ Security Wall System from USG Corporation for its security-level durability and more. The system's specially formed steel sheets and high-strength plasters create walls that are nearly 40 percent thinner than concrete block. "We saved a lot of labor time, and the walls weighed significantly less," said Marciales, whose firm pioneered STRUCTOCORE's use in the project's elevator shafts.

PLASTER SYSTEM STANDS UP TO ADOLESCENT ENERGY

The adage "Time will tell" certainly applies to the performance of walls at Hillenbrand Hall, a 300,000-square-foot, $3 million dormitory built six years ago at Purdue University, West Lafayette, Ind. "We built these walls to last," said John Richardson, the dormitory's manager. Instead of using less expensive drywall, the school invested in a three-coat plaster system comprising STRUCTO-BASE® Gypsum Plaster and RED TOP® Keenes Cement from USG Corporation for attractive yet durable walls. Six years later, Richardson comments, "We haven't performed any maintenance but painting on these walls. They'll probably last for decades before needing resurfacing."

MORE SOURCES OF AR INFO

To learn more about abuse resistance and obtain details on specific products and systems, there are several places to which architects and builders can turn. Look for continuing education seminars on the topic sponsored by organizations such as the American Institute of Architects. Manufacturers of AR systems, such as USG Corporation, which has worked extensively over the last 20 years to develop abuse-resistance guidelines, offer seminars, technical brochures and guidelines on the topic. Also visit the Web sites of gypsum product manufacturers and masonry companies, where specifiers often can find special sections devoted to abuse resistance.

ABOUT USG

USG is a Fortune 500 company with subsidiaries that are market leaders in their key product groups: gypsum wallboard, joint compound and related gypsum products; cement board; gypsum fiber panels; ceiling tile and grid; and building products distribution. The company offers a range of abuse-resistant wall systems featuring use of SHEETROCK® Brand Gypsum Panels, FIBEROCK® Brand Abuse-Resistant Panels, veneer plasters and plasters.

For more information about the company's abuse-resistant systems, write USG at P.O. Box 806278, Chicago, IL 60680-4124, call USG's Customer Service Department at 1-800-USG-4YOU or visit the company's Web site at www.usg.com.

LEARNING OBJECTIVES:

- Define abuse resistance in terms of three categories: surface damage, penetration and security.
- Compare the benefits of masonry and AR wall systems.
- Discuss abuse-resistance testing.
- Explain the components that make up abuse-resistant wall systems.

INSTRUCTIONS:

Refer to the learning objectives above. Complete the questions below. Then turn the page upside down and check your answers. Fill out the self report form on page 218 and submit it or use the Continuing Education self report form on *Record's* web site - www.architecturalrecord.com - to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS:

1. What is meant by the term "abuse resistance?"

2. What components are used for resisting different amounts of abuse in AR systems?

3. What is the most abuse-resistant type of ceiling material?

4. What are the advantages of AR wall systems over masonry construction walls?

5. What finishes are available for abuse-resistant applications?

ANSWERS:

1. Generally, abuse resistance is defined as the ability of a wall to resist harm from an abrasion that damages the surface of the wall, an impact that penetrates the wall surface and a penetration that causes significant wall damage and breaches the security of the building.

2. For light-duty, AR drywall panels, drywall panels with improved face paper and engineered wood fiber panels are available. For moderate-duty, wood fiber panels designed for high impact or AR panels with veneer plaster or laminate-faced panels are available. For heavy use, these AR wall systems can be used together, such as a two-coat veneer plaster system over high-impact wood fiber panels or two layers of AR drywall panels and an AR veneer plaster face. In security applications, AR systems can incorporate high-strength plaster reinforced by steel sheets or concrete block.

3. Commonly, ceilings are acoustical panels on a suspended grid. These usually have a painted surface and are easily damaged. The panels can be made abuse resistant by using more durable cast products with color throughout the panel so that scratches are less visible. Abuse resistance is highest when ceilings are made of gypsum board panels, which can be attached on furring strips directly to ceiling rafters, or through suspension systems.

4. Traditionally, masonry walls were used for resisting abuse, either surface damage or penetration. Masonry has the added advantages of being fire resistant and the materials are available and inexpensive. However, the development of AR wall systems offers advantages over masonry. Most noticeable is the weight difference; masonry weighs five to eight times more than AR wall systems of drywall, wood fiber or veneer plaster. A second advantage is the construction time. While masonry requires a 60- to 90-day curing time during the construction process, AR wall systems are brought to a job site ready to install with only a joint treatment necessary for finishing. The next critical element is labor. Masonry labor has become specialized, difficult to find in some areas and expensive. Masonry construction also requires water availability and constant temperature levels. The other advantages of AR wall systems are that they require less floor space and they can reduce the cost of plumbing and electrical installation while providing better abuse resistance for abrasion and penetration than concrete masonry units.

5. Abuse-resistant finishes can be left basic, finished with a paint coating or covered with plaster. Plaster applied to the wall surface gives a smooth finish that can be painted or wallpapered to give a more sophisticated appearance.

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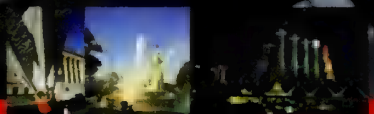

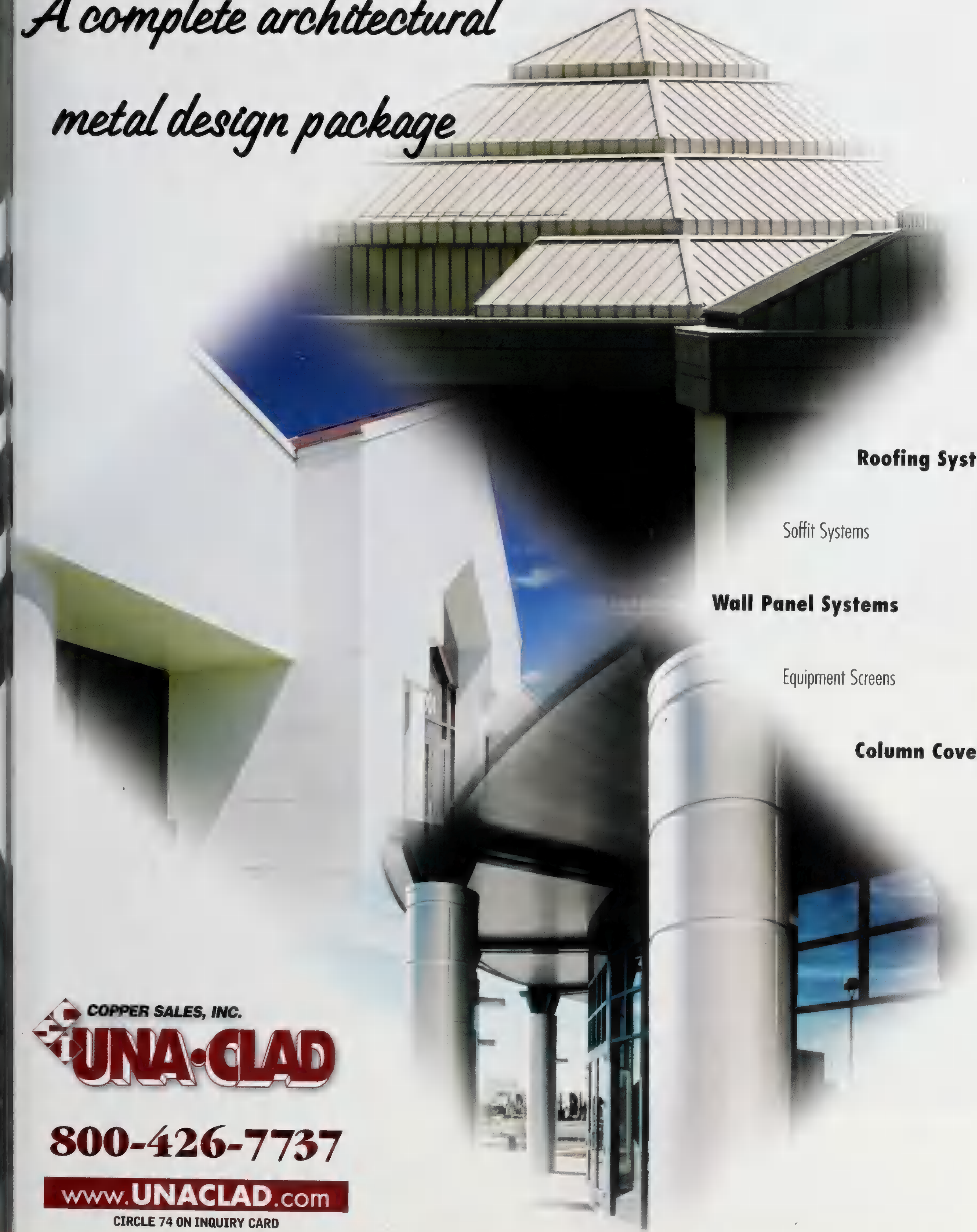
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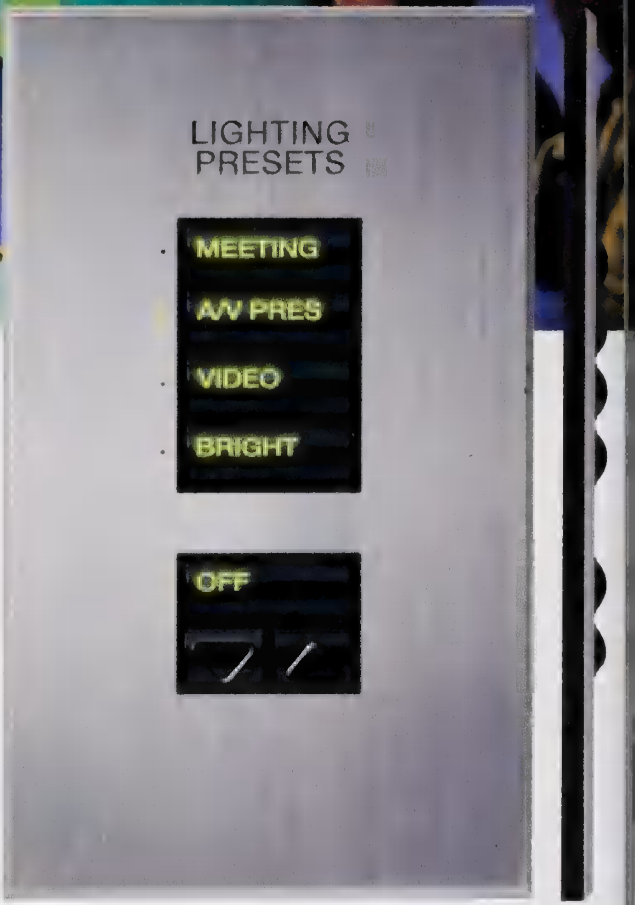

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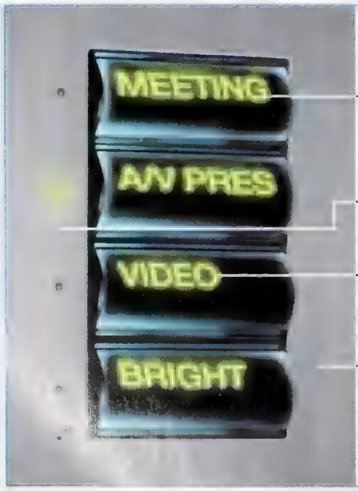

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THE DIGITAL PRACTICE

Tech stocks may be in retreat, but technology is still marching forward.

Three years ago, it seemed like anyone with a Web site, a PowerPoint presentation, and a half-baked idea for an e-business was virtually assured start-up funding. Over the past year we've witnessed the demise of this gold-rush Zeitgeist. Technology stocks took a nosedive, and thousands of New Economy workers have been released into the murky waters of unemployment. The list of companies that have cut back their staffs reads like a Who's Who of the digital age: Motorola, Cisco, Dell, Lucent...

This right-sizing, however unfortunate for its casualties, had long been predicted. From a consumer's standpoint, the good news is that today's leaner, wiser technology companies have more incentive than ever to offer products that are powerful, flexible, and user-friendly.

In this month's digital practice section, we examine software developed because users demanded it, and tools that have been substantially improved based on user feedback. A major CAD company will soon offer a software package that lets you save your hand-drawn sketches electronically—a real boon to architects who prefer pencil and paper to keyboard and mouse (and there are lots of you out there). The Department of Energy has released a next-generation tool for predicting a building's energy consumption, just as owners are increasingly anxious about rising energy costs. Finally, our feature describes how architects, frustrated by the distortions that occur when CAD drawings are sent electronically, can use PDF files—long a staple in publishing houses—to preserve the appearance of their documents.

Don't mistake today's uncertain climate for tentativeness. There are still plenty of people writing software code and developing hardware standards. Unlike the Bush administration on carbon dioxide emissions, digital technology isn't going to reverse course. It's just at a necessary turning point on the road to improvement. *Deborah Snoonian, P.E.*

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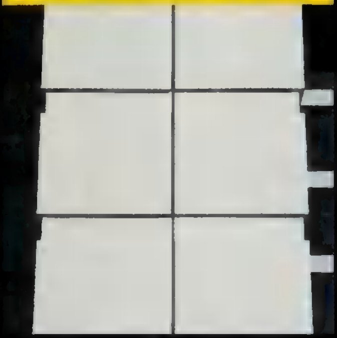

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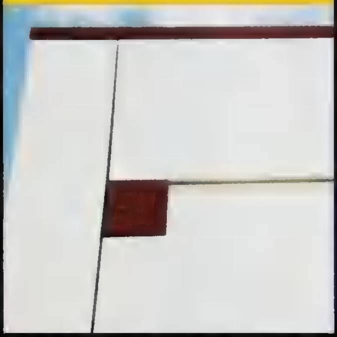

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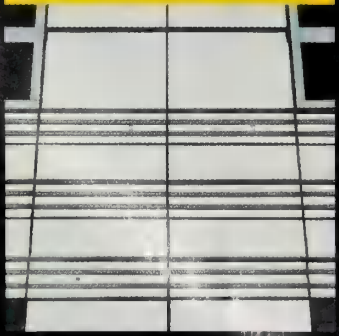

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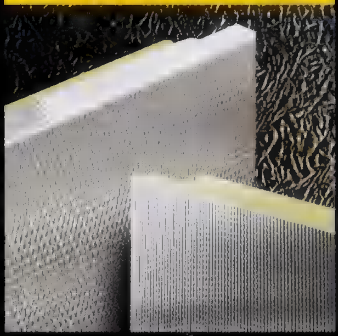

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Digital Briefs Department of Energy Unveils EnergyPlus • Autodesk's New Design Software Lets Architects Take Back Their Pencils and Trace Paper

New energy simulation software improves features of old tools and offers more flexibility

For over 20 years, design professionals have turned to DOE-2 [see Digital Architect, page 195], the Department of Energy's (DOE) flagship tool, to predict the energy performance of buildings. Those working on military projects relied on BLAST, the Department of Defense's (DOD) comparable program. In April, however, DOE released the first version of EnergyPlus, a new simulation tool that combines the best of DOE-2 and BLAST while offering more flexible and advanced features of its own.

What's new?

EnergyPlus essentially consists of three main parts: an overall simulation manager, which controls the entire simulation; a heat and mass balance engine, which calculates thermal and humidity conditions of the proposed design; and a building systems simulation manager, which oversees the proposed mechanical and electrical systems.

Unlike BLAST and DOE-2, EnergyPlus relies on an integrated simulation process that gives more accurate predictions of room temperature. At user-specified time intervals, heating and cooling load are calculated and submitted to the building systems simulation manager. In turn, the mechanical and electrical systems immediately respond to these loads. If some portion of the heating or cooling load can't be met by the proposed building systems, the temperature of the space adjusts accordingly when thermal conditions are recalculated at the next time interval. This is an improvement over DOE-2 and BLAST, both of which use sequential simulation, in which heating and cooling loads for all time intervals are calculated first, before they're passed on to the building systems. This method provided no opportunity for feedback and adjustment between temperature calculations and the HVAC's response. And, unlike BLAST and DOE-2, which allow only hourly time steps, EnergyPlus permits users to select time increments between load calculations that are most appropriate for the evaluation at hand.

Like BLAST, EnergyPlus calculates loads according to the heat-balance approach, which is more accurate and complex than the room-weighting-factor approach used by DOE-2. The heat-balance approach is a more robust calculation method requiring faster processing times than were available to most people when DOE-2 was originally developed.

EnergyPlus also allows designers to configure HVAC systems by connecting air and water loops that simulate ducts and pipes to appropriate equipment components, such as diffusers, VAV boxes, and radiators. BLAST and DOE-2 users are limited to preconfigured mechanical systems. The new program promises other features as well, ranging from moisture absorption and desorption calculations to window-shade simulations.

Simpler code

Because DOE-2 and BLAST were developed over time by many researchers, they suffer from "spaghetti code," in which threads of data and subroutines for a particular type of energy simulation weave through the program. Only experienced researchers can make modifications to this tangled set of instructions. In contrast, EnergyPlus exhibits an organized and modular structure that can be easily modified, expanded, or linked to other software tools.

One temporary hitch is that EnergyPlus doesn't yet have a truly user-friendly interface. DOE hopes third-party developers will furnish this piece, as they did for DOE-2. Eley Associates of San Francisco (www.eley.com), which created the VisualDOE interface for DOE-2, intends to provide a similar graphical interface for EnergyPlus.

Confidence with prudence

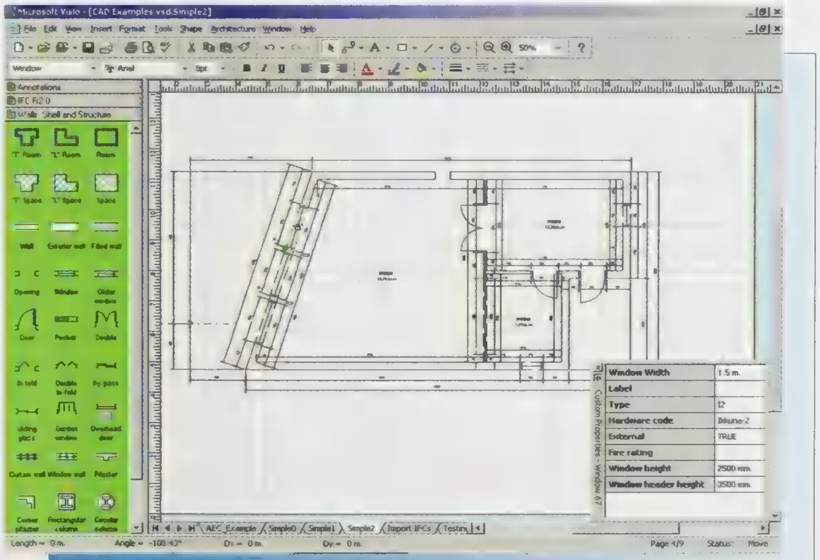
Users of EnergyPlus have expressed the usual mix of enthusiasm and caution that accompanies new software releases. "The algorithms used in EnergyPlus are superior to those of DOE-2," observes Charles Eley, FAIA, P.E. His firm will begin using EnergyPlus in its architectural consulting work; once the staff has gained enough experience with it, they will likely abandon DOE-2.

Adrian Tuluca, principal of Steven Winter Associates in Norwalk, Conn., expressed concern about long-term technical support. "In the past, funding for energy software focused on adding features to make programs more comprehensive. But commercial success lies in maintenance—fixing simple problems." If EnergyPlus is to realize its potential, says Tuluca, the government has to provide ongoing funding for such assistance.

According to architect Drury B. Crawley, AIA, manager of DOE's building energy tools, DOE will continue to support DOE-2 at least until the majority of its users migrate to EnergyPlus. (DOD ended support for BLAST in 1995.)

Version 1.0 of EnergyPlus, which runs on Windows 95, 98, and NT, can be downloaded for free at www.eren.doe.gov/buildings/energy_tools/energyplus. Check this Web site also for dates and locations of upcoming training workshops.

—*Nancy B. Solomon, AIA*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Status: Move

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With EnergyPlus, heating and cooling loads are calculated, and the effect on the building's systems can be seen in real time.

Architectural Studio: Software for architects who don't use software

The future of digital design has arrived. I realize it when I enter the techno-sleek office of an architecture firm in Marina Del Rey, Calif., to watch teams of young designers and firm principals explore the features of Architectural Studio, a new program developed by Autodesk, due for release later this year. Regardless of their computer skills, the architects quickly fill screens with sketches and models—overlays and iterations of design ideas. Technical jargon is limited. Instead, there's lots of peeking over shoulders to see who's drawing what. There is collaboration. There is competition. This is not the buttoned-up, heads-down behavior of a 20th-century CAD drafting room; it is the turned-on, tuned-in architectural studio of the new millennium.

Architects, grab your pencils

In developing Architectural Studio, Autodesk has been working with leading firms nationwide, gathering feedback on the way architects really work. "This product needs to be developed by architects and others who know us and our creative and business processes well," stresses Martin L. Siefering, AIA, principal and chief information officer of Perkins Eastman Architects in New York. That sentiment recurs in firm after firm I observed: two offices each of NBBJ and SOM; Kohn Pedersen Fox; HOK; Perkins Eastman; and consulting engineers Arup.

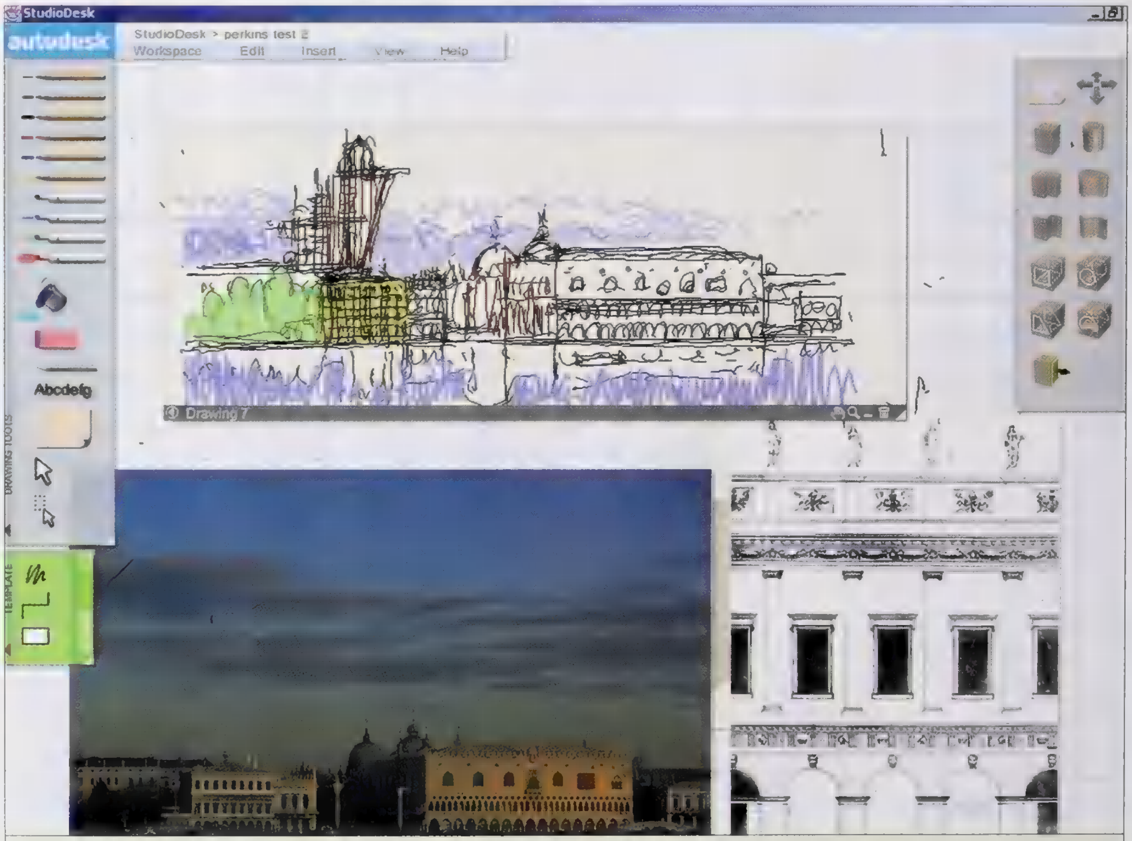
Judging by both hands-on experience and observation, I define Architectural Studio as software for design thinking. Architects think by drawing. In the hand of an architect, a 2B pencil, a thick blue china marker, or a fine camel's hair brush becomes an instrument for exploring and refining form and function, texture and proportion, light and shadow. The medium often is the familiar roll of yellow trace, overlaid on previous sketches, hard-line drawings, site plans, or aerial photos. From the loosest conceptual sketch to the most carefully considered detail, the drawing process is where design happens.

Software aids many architectural tasks—specifications, energy calculations, project management—yet many architects think that CAD, belying its acronym as computer-aided design, has done little to aid the design process. The precision and consistency that make CAD well suited to producing construction documents are at odds with the spontaneity and flexibility that architects need during schematic and design development phases. The result has been what Siefering calls a "technology divide within the profession," between those who use and those who refuse CAD.

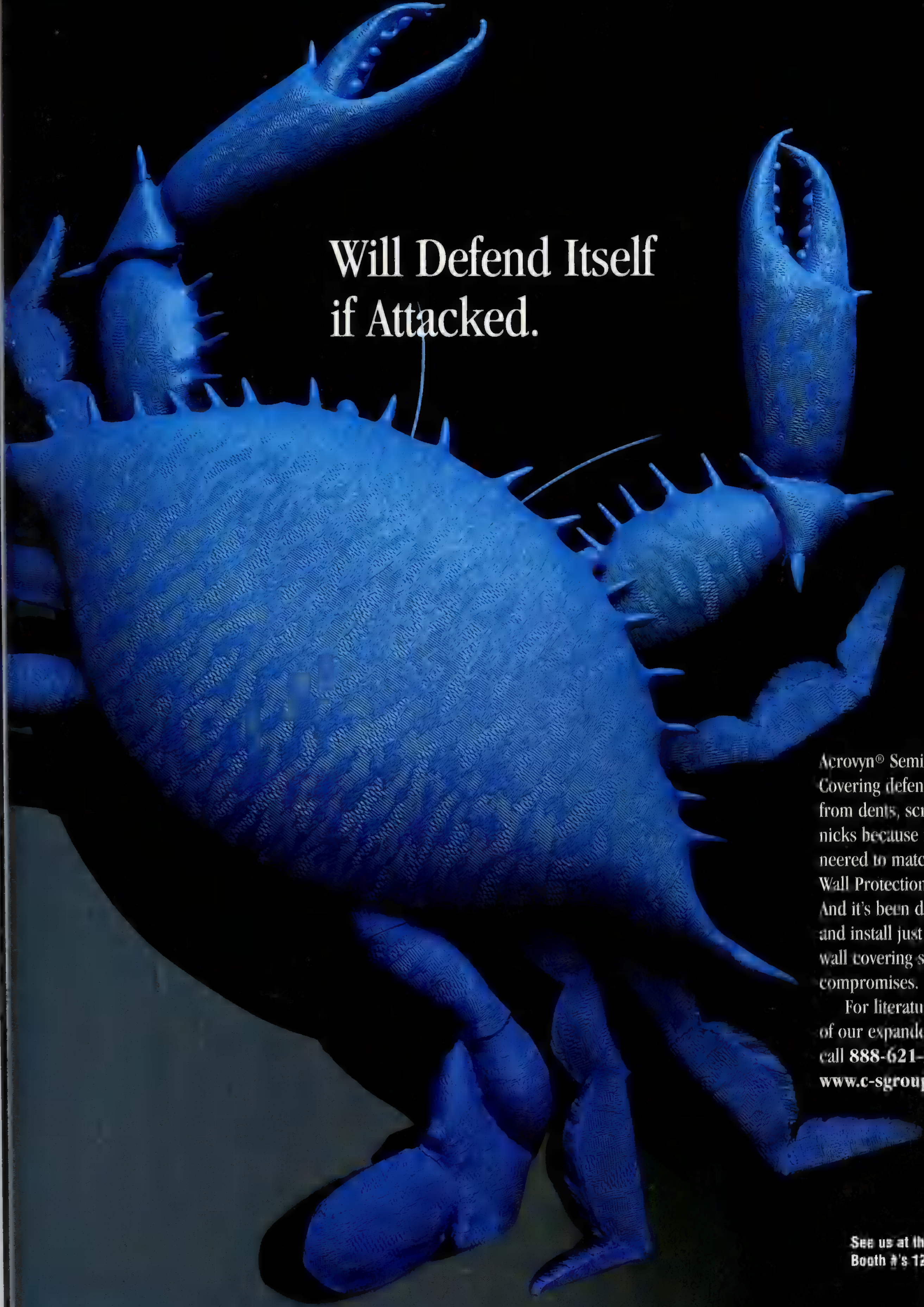
Unleashing design thinking

Many design software vendors, including Autodesk, offer 3D modeling tools as an alternative to the rigors of 2D drafting-oriented CAD. However, even the friendliest 3D modeling tools impose limitations on design thinking. With Architectural Studio, Autodesk hopes to leap over these barriers. The interface is clean and simple, paring away most of the menu and toolbar clutter of the ubiquitous Windows desktop. Instead, arrayed around a graph-paper-covered "board" are the digital equivalents of pencils, markers, erasers, and, yes, even yellow trace. Select any virtual tool and use it to draw freehand, hard-lined (as with triangle and parallel rule), or via template-like squares, circles, and ellipses. There also is a 3D-trace mode, with its own claylike 3D tools, and the 2D and 3D tools can be mixed and matched (inserting 3D objects into 2D drawings or sketching in 2D over 3D models). Architects can work in Architectural Studio at work, at home, or in the field, and they can share their work over local area networks or on the Internet. Designs can be started in Architectural Studio and later handed off for further development and refinement in CAD, as well as the reverse: CAD drawings can be imported into Architectural Studio for the digital equivalent of a "desk crit," but with every design stroke captured in the computer.

As seen in mid-development during April 2001, Architectural Studio holds great promise for extending the usefulness of software into early-phase design exploration and late-phase design communication, areas where effective software has been lacking. However, Autodesk faces a tough challenge: build in enough technical rigor to make the finished product useful, yet continue to shield non-CAD users from intimidating complexity. Siefering emphasizes "focusing on keeping the technology simple, flexible, and in tune with design process." If Autodesk can deliver on that promise, working "in the Studio" will take on a whole new meaning. *Jerry Laiserin,* FAIA



Architectural Studio by Autodesk provides digital equivalents of familiar drawing tools, such as tracing paper, pens, and pencils. Designers with no CAD experience can work directly in 2D or 3D, with sketches, prints, or photos.



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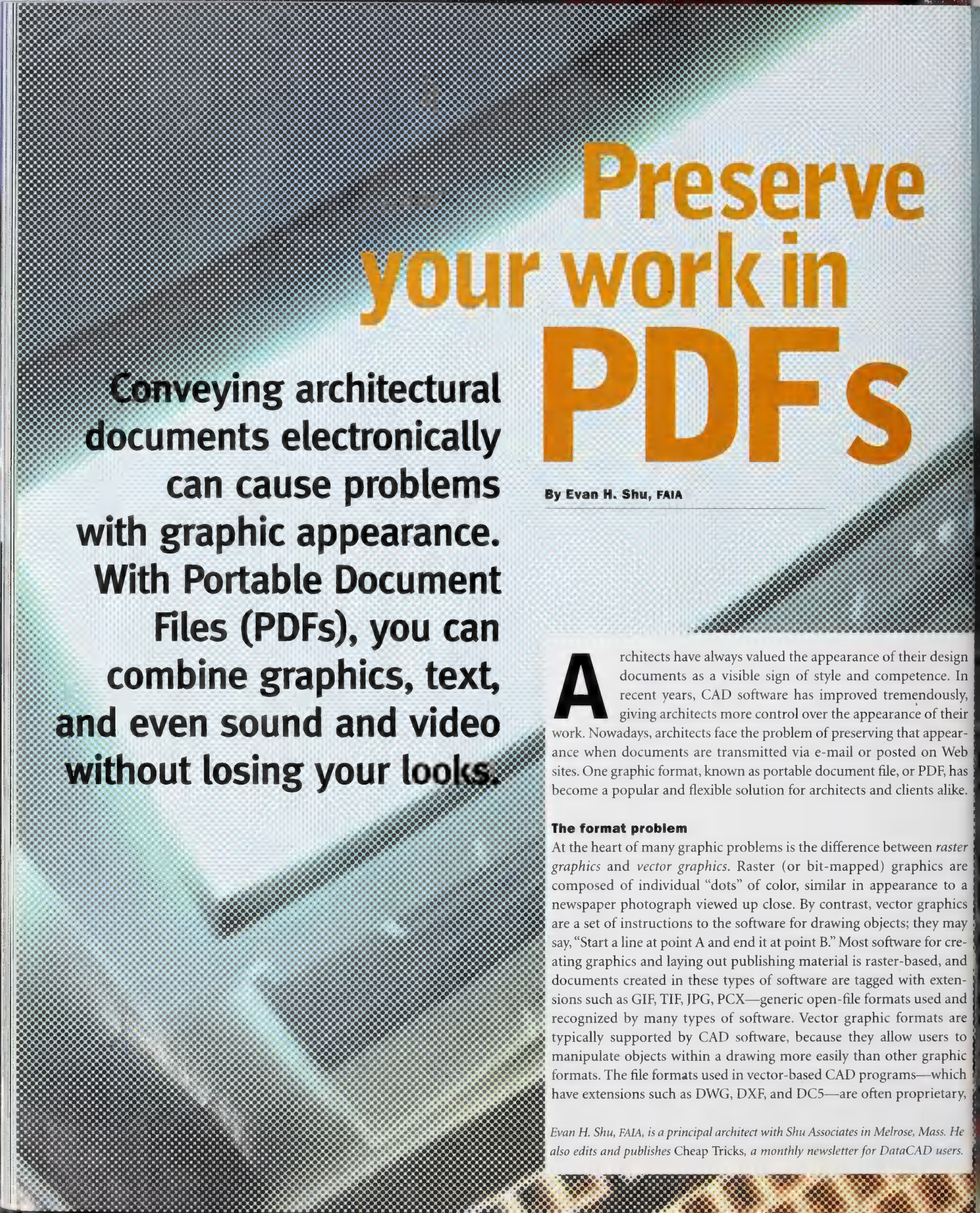


Preserve your work in PDFs

Conveying architectural documents electronically can cause problems with graphic appearance. With Portable Document Files (PDFs), you can combine graphics, text, and even sound and video without losing your looks.

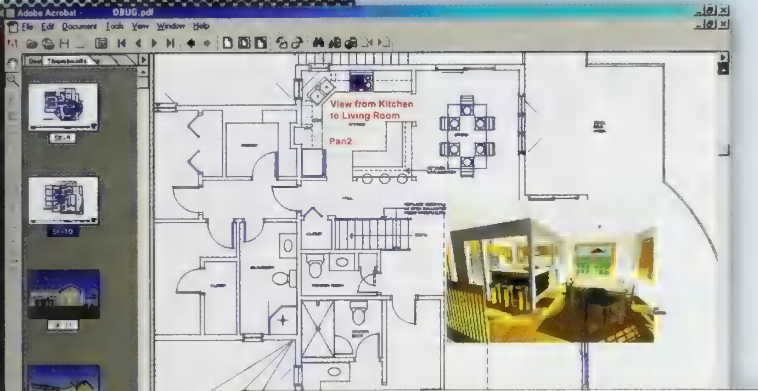
By **Evan H. Shu, FAIA**

Architects have always valued the appearance of their design documents as a visible sign of style and competence. In recent years, CAD software has improved tremendously, giving architects more control over the appearance of their work. Nowadays, architects face the problem of preserving that appearance when documents are transmitted via e-mail or posted on Web sites. One graphic format, known as portable document file, or PDF, has become a popular and flexible solution for architects and clients alike.

The format problem

At the heart of many graphic problems is the difference between *raster graphics* and *vector graphics*. Raster (or bit-mapped) graphics are composed of individual "dots" of color, similar in appearance to a newspaper photograph viewed up close. By contrast, vector graphics are a set of instructions to the software for drawing objects; they may say, "Start a line at point A and end it at point B." Most software for creating graphics and laying out publishing material is raster-based, and documents created in these types of software are tagged with extensions such as GIF, TIF, JPG, PCX—generic open-file formats used and recognized by many types of software. Vector graphic formats are typically supported by CAD software, because they allow users to manipulate objects within a drawing more easily than other graphic formats. The file formats used in vector-based CAD programs—which have extensions such as DWG, DXF, and DC5—are often proprietary,

Evan H. Shu, FAIA, is a principal architect with Shu Associates in Melrose, Mass. He also edits and publishes Cheap Tricks, *a monthly newsletter for DataCAD users.*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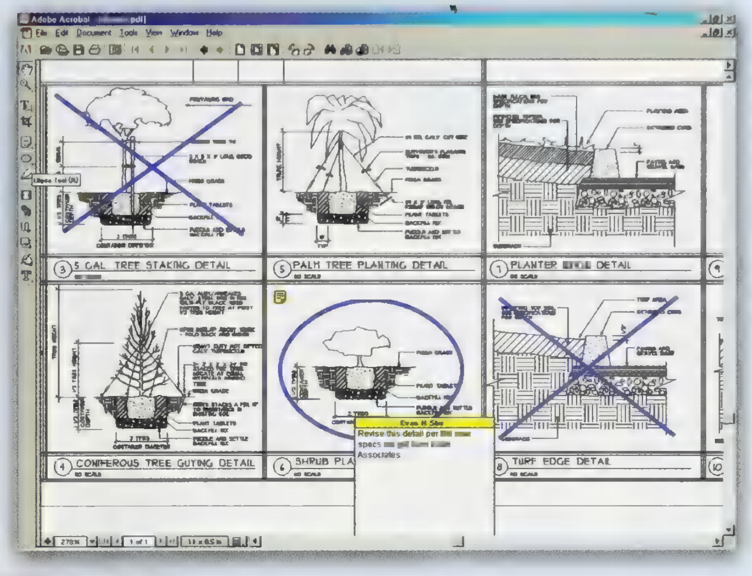
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Above: PDF files can be used to mark up CAD drawings and add "sticky note" review comments for digital collaborative work. Left, top, and bottom: Using PDF files, architect Ed Wolfstein, AIA, gives his clients presentations with thumbnail picture indexes and pop-up, panoramic, animated views of rooms.

used and readable solely by the software manufacturer.

When architects convey CAD documents via e-mail or post them to Web sites, they must either convert the drawing objects to a raster-based format or ensure that recipients have the right CAD software on their computers to read the files. Converting vector graphics to raster graphics is simple but can result in graphics that are visually unsatisfactory. Converting raster graphics to vector graphics is both difficult and potentially expensive, and the results aren't guaranteed to look good.

When CAD drawings are converted to raster-based file formats, lines and objects often appear grainy, jagged, or pixellated when "zoomed" on a computer screen so the viewer can make out the details. To address this problem, some architects take small "snapshot" portions of CAD drawings and save them in raster-based formats that can be viewed at full scale on a screen without graphic distortion. In either case, graphic distortions typically increase when images are printed. While CAD software manufacturers have made periodic attempts to develop file viewers that correct this problem, their efforts have either fallen short of expectations or suffered from lack of widespread distribution.

The PDF solution

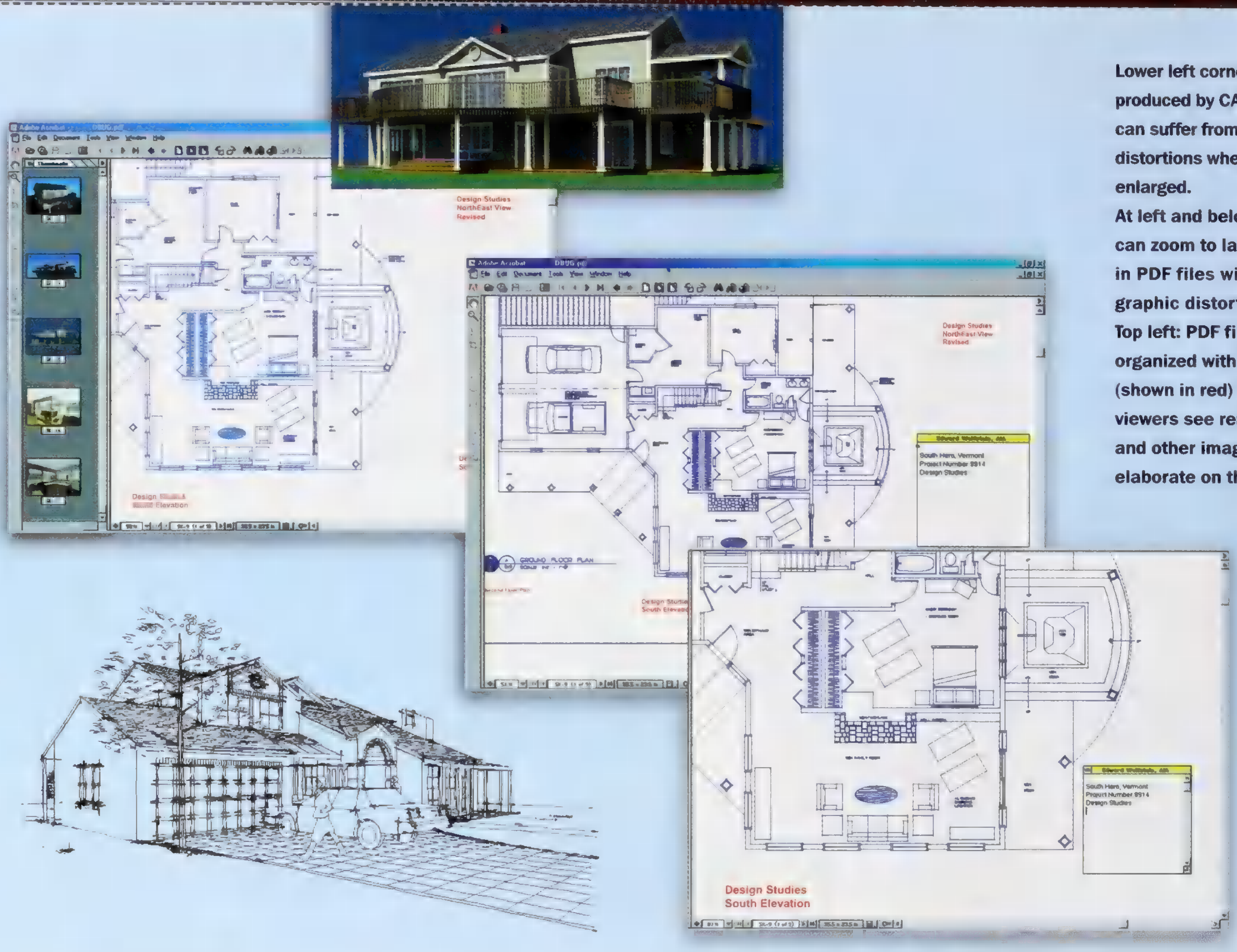
The PDF format offers one solution to these concerns. It's an alternative file format that architects can use to transmit and view documents electronically. PDF files aren't new; the publishing world has used them for years to transfer desktop publishing layouts among different systems or software. Files formatted in PDF are capable of handling multiple media—text, images, audio, and video. Within PDFs, both vector- and raster-based graphics appear intact as they were created in the original documents, even when details are viewed up close. Documents saved in PDF format will appear on a computer screen and in print at the same quality as the original documents.

Another advantage of PDF files is that it's difficult to edit their content if you don't have access to the software programs used to create the elements within them. This makes them more secure than many other file types, such as word processing or spreadsheet files, whose contents could be manipulated as they are passed from hand to hand.

To view PDF files, users must have either a Web browser equipped with a PDF reader, or separate PDF reader software such as Adobe's Acrobat Reader, available at no cost from its Web site (www.adobe.com). Most Web browsers include readers as plug-ins, so users can view PDF files by simply pointing and clicking on them like any other link, and many computers come pre-equipped with separate reader software.

Many software programs, including DataCAD 9, are now offering PDF output as a standard export option. One can also create PDF files using several different tools: for instance, a version of Adobe Acrobat made for this purpose (which is not free of charge), Jaws PDF Creator (www.jawssystems.com), or, for Macintosh users, ePrinter (www.gis.net/~dinmore/).

In response to increasing demand for file sharing and reviewing, the newest release of Acrobat allows multiple reviewers to mark up and comment on PDF files viewed via a local or wide area network or online. The new version also lets users import to or export from PDF files using rich text format (RTF), for ease of repurposing and reformatting their contents. Other new features increase the inter-



Lower left corner: Graphics produced by CAD software can suffer from pixellation distortions when printed or enlarged.
At left and below: Viewers can zoom to larger scales in PDF files without graphic distortions.
Top left: PDF files can be organized with hotlinks (shown in red) that let viewers see renderings and other images that elaborate on the design.

active nature of viewing and marking up PDF documents.

Architects who work with PDF-formatted files have seen the benefits quickly. "My clients are pleased to receive drawings in such clean, sharp detail," says Steven J. Krapek of Archisculpture Architects in San Jose, Calif. Adds Ernest Burden III, an architectural renderer in Ossining, N.Y., "Using PDFs lets you control the appearance of publications that leave your office, which is very important—like it or not, you will be judged by these." Clients have been among the biggest fans because PDF files are so easy to view. Matthew E. Hirsch of Hirsch Architects in Boca Raton, Fla., says, "Many of our clients have requested that we now send them PDFs of all drawings."

Presentation power and storage solution

Some architects use PDF files to create presentations for clients. Ed Wolfstein, AIA, of Wolfstein Architecture, in Burlington, Vt., explains, "I create hotlinks within each page of the PDF file, that, when clicked, will take you to a related document, or another part of the same document. It's like navigating a Web page." For one project, he created plans, 3-D models, and animation files, and e-mailed them as linked PDF files to his computer-savvy client. "He was able to view and comment on the designs right away, and we evolved the design together very quickly," he notes. Presenting information using PDFs also allows flexibility in pulling together multiple media to enrich the information shown in presentations. "As we become increasingly environmentally conscious, planning boards and other committees want a better understanding and visualization of proposed projects. Simple plans and elevations don't cut it anymore. Multimedia presentations are more informative," says Wolfstein.

PDFs can also be used to create archives of drawings and other documentation for completed projects, specification manuals, contract documents, and virtually any other type of documentation. The ability to embed the files with hotlinks makes it simple to create documents that are easily navigable. With Adobe Acrobat software, users can also create "sticky notes" on which review comments or annotated guides to the file's contents can be written. Thumbnail graphic images of each of the pages within a PDF file, as well as index bookmarks that can be searched by the users, also help viewers navigate a PDF document.

The security caution

By default, PDF files don't allow viewers to alter their content or format, but that doesn't mean you should throw caution to the wind when sending them electronically. When creating a PDF file, you can add digital signatures and enable security settings to prevent viewers from changing or even copying its text. Still, if security controls are lax or if a hacker wants to grab the information in the document badly enough, there are ways to circumvent these protective measures. Universal portability of documents for legitimate uses unfortunately also means easier uses for illegitimate purposes.

Still, all in all, PDF represents another major tool in an architect's arsenal. As an aid for preserving the graphic appearance of documents or as a productivity tool to enhance workflow, PDFs can be a boon to architects who want to be sure their intended messages aren't lost in digital media. ■

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Resources for energy design and simulation

By Jerry Laiserin, FAIA

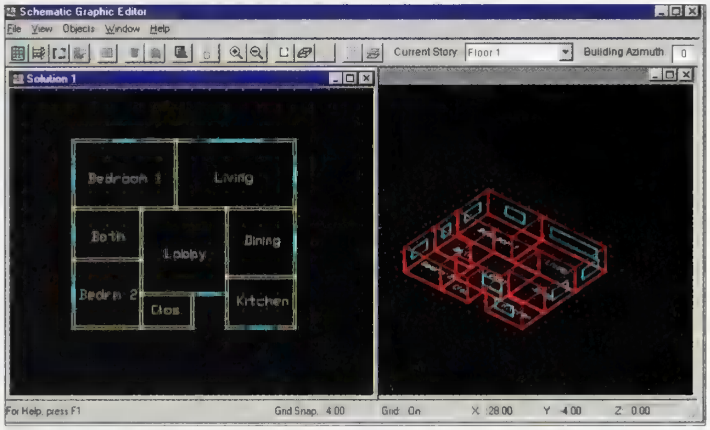
Rolling blackouts. Natural-gas shortages. Soaring prices for electricity, heating oil, and gasoline. Controversy over carbon dioxide and other greenhouse gas emissions. Competing political pressures for energy exploration versus wilderness preservation. Current headlines seem to vindicate the Malthusian doomsday scenarios of *The Limits to Growth*, by Jay Forrester, Donela Meadows, and others, one of the first computerized simulation studies of environmental economics and a precursor of today's sustainable design movement. Because buildings account for a good portion of America's energy consumption, and because energy cost is a significant component of the total life-cycle cost of every building, architects have an obligation to their clients and to society at large to design for energy efficiency and sustainability. Fortunately, there is a wide variety of resources available to help architects make better-informed decisions about the energy performance of their designs.

Design calculations

In response to the energy crisis of the 1970s, the federal government undertook multiple initiatives in the late 1970s and early 1980s to improve building energy performance. The Department of Energy (DOE), through its subcontractor, Lawrence Berkeley National Laboratories (LBNL), sponsored the development of a set of building-envelope-based energy use and cost analysis tools that came to be known as DOE-2. Concurrently, the Department of Defense, through the Army Corps of Engineers' Construction Engineering Research Laboratory (CERL), sponsored the development of its own set of whole-building analysis tools for building loads and system thermodynamics, or BLAST. By the mid-1990s, separate approaches for energy savings for civilian and military buildings no longer seemed necessary, and joint development efforts turned toward crafting a unified and enhanced tool for building energy analysis.

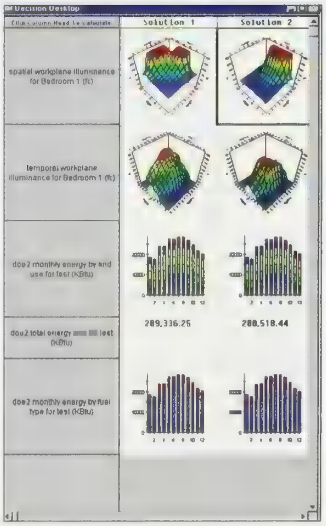
One criticism that had been leveled at DOE-2 and other first-generation tools was that a building's design needed to be nearly complete before a robust, full-blown energy analysis could be conducted—and yet the real opportunities to enhance energy savings occur early in the design phase, when critical decisions about site orientation, fenestration, building massing, and wall construction are still fluid. In addition, the tools were not very user-friendly. In response to these issues, joint efforts by DOE, CERL, LBNL, and others led to the development of EnergyPlus, released on April 12 of this year [Digital Briefs, page 187].

EnergyPlus is a first attempt to allow designers to simulate energy usage earlier in the design process, in a more flexible and user-friendly environment. It's not ideal in this regard, but it's a step in the right direction, considering that many of the detailed parameters needed for accurate energy simulation typically are not yet finalized in schematic design—a challenge for any software tool to address. And EnergyPlus does make it easier for novice users to enter data for simulations.



Current Story: Floor 1
Building Azimuth: 0
Grid Snap: 4.00
Grid: On
X: 28.00 Y: -4.00 Z: 0.00

The Building Design Advisor, from Lawrence Berkeley National Laboratories, enables architects to work interactively with schematic designs and energy performance criteria.


Decision Desktop
Click Column Head to Calculate
Solution 1
Solution 2
spatial workplane illuminance for Bedroom 1 (fc)
temporal workplane illuminance for Bedroom 1 (fc)
doe2 monthly energy by end use for test (KBtu)
doe2 total energy use for test (KBtu)
doe2 monthly energy by fuel type for test (KBtu)

doe2 total energy use for test (KBtu): Solution 1 289,336.25; Solution 2 288,518.44

Because EnergyPlus combines the best features of DOE-2 and BLAST, along with new features, it remains largely compatible with software that provided user-friendly input and output for DOE-2, which was generally developed by third parties. For example, Visual-DOE, from energy consultants Eley Associates in San Francisco, offers a graphical interface that eases the laborious chore of entering data about a building's climate, location, construction, operation, HVAC systems, and applicable utility rates, as required for a comprehensive energy analysis. Visual-DOE also includes graphic displays of performance parameters, such as hourly energy consumption, that make analytic results easier to understand. Visual-DOE version 3.0 is now part of a larger suite of Green Design Tools, also from Eley Associates, which includes an energy cost calculator and modules for lighting, home energy use, and others.

Another interactive front-end tool that works with DOE-2 and EnergyPlus is the Building Design Advisor (BDA), developed by the Building Technologies Department of

Contributing editor Jerry Laiserin, FAIA, provides strategic consulting services to architects and their technology providers.

WWW For more information on technology for architects, including reviews, vendor lists, and links, go to Digital Architect at **www.architecturalrecord.com**

LBNL. BDA incorporates three functions: the Building Browser for point-and-click selection of building parameters, the Schematic Graphics Editor for input of simplified building models, and the Decision Desktop for comparison of alternative energy performance scenarios. The BDA development team also created the Desktop Radiance daylighting analysis software [Digital Architect, MAY 2001, page 281]. In the future, LBNL plans to integrate Desktop Radiance with BDA's energy performance modules to create a more comprehensive green design package.

Geopraxis, based in Petaluma, Calif., has also created several DOE-2 add-on programs that work with EnergyPlus; some of these are available for free on the Web through California's public utility companies or the California Energy Commission. One such program is EDR-Charrette, available at EnergyDesignResources.com (EDR). It provides parametric what-if scenarios for analyses of retail, commercial, and educational facilities. Another of Geopraxis' free utilities, Quickee 1.0, runs as a Microsoft Excel template to simplify and manage user input to analyses done in DOE-2 or EnergyPlus. In conjunction with CAD vendor Artifice, Inc. (developer of the 3D modeler Design Workshop), Geopraxis also is exploring interactive approaches to linking CAD modeling and energy analysis.

GREEN BUILDING RESOURCES RANGE FROM ENERGY SIMULATION TOOLS TO SOFTWARE THAT AIDS PRODUCT SELECTION.

Empirical research versus nuts and bolts

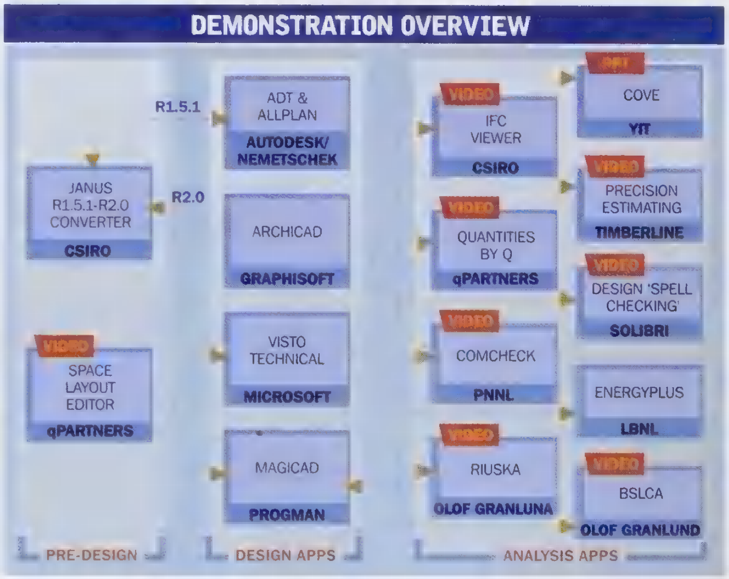
Although DOE-2, EnergyPlus, and various add-on and helper programs evaluate energy performance for specific buildings under design, much empirical research remains to be done on the nature and composition of building skin materials, which have a major impact on the environmental and energy performance. Many of these research efforts use software programs to collect and analyze information. Some of the best empirical research of this sort in the U.S. is being conducted at the Center for Building Performance and Diagnostics (CBPD) at Carnegie Mellon University. Current projects at CBPD that use digital tools include a building investment decision system (BIDS) that performs life-cycle cost comparisons of energy efficiency, waste management, and renewable resources; S2, a Web-enabled, space-based design tool, with dynamic links to different building performance simulation applications; and a self-aware building program (SAB) for so-called smart structures that monitor and document their own performance.

Getting it together

A full cycle of building energy design can easily expand to three or more independent analyses, using different software and tools. Such incompatibilities and redundancies impose computational overhead on the design process, discouraging designers from bringing all the best tools to bear on each project. Interoperability, or the ability of diverse software programs to operate interchangeably on the same data or model, is targeted at this problem, and some approaches to interoperability hold specific promise for green design.

The International Alliance for Interoperability (IAI) is a global consortium of product manufacturers, software developers, and the AEC user community. Since 1995, IAI has been working on a universal set of building component descriptions, called Industry Foundation Classes (IFCs), which will allow various programs to operate on the same data in the same format. A parallel but independent group of IAI members, operating under the banner of building life-cycle integrated software (BLIS), successfully demonstrated in March 2001 multiple IFC2.0-compliant programs that shared the same 3D CAD building design model for various purposes, including energy code analysis, building performance simulation, and construction cost estimating. Participating BLIS software includes Microsoft Visio, Graphisoft's ArchiCAD, Timberline's Precision Estimating, and EnergyPlus.

Another IAI-related activity, the Building Performance Working Group has proposed a version of the Web-standard extensible markup language XML geared to the data needs of green building design. This proposed schema, or descriptive framework, called gbXML, will link 3D CAD building models directly to energy performance criteria. Initially, gbXML will connect to models created in Design Workshop by Artifice. However, because gbXML is compatible with aecXML, a wider AEC language standards effort, the green building schema eventually will work with aecXML-compliant CAD programs.



Design programs such as Graphisoft's ArchiCAD and Microsoft's Visio feed building model data directly to analytic programs such as EnergyPlus.

Going green

Ultimately, efforts like gbXML will help position energy design in the larger context of green building design, which also takes into account the embodied energy of building materials—that is, the energy consumed in extracting, processing, and transporting them. On the domestic front, decision support software known as Building for Environmental and Economic Sustainability (BEES)—developed jointly in the 1990s by the National Institute of Standards Technology, the Environmental Protection Agency, and the Partnership for Advancing Technology in Housing (PATH)—helps design professionals balance the environmental and economic performance of building products. Another software tool is the Green Building Advisor (GBA), developed by the Center for Renewable Energy and Sustainable Technology (CREST), Design Harmony, and BuildingGreen. GBA helps designers identify techniques and technologies to reduce the environmental impact of a building project while ensuring healthy and productive indoor spaces.

In perhaps a final irony, it may turn out that energy-consuming computer technology is what helps to keep the lights on for a sustainable future. ■

Show Me

"So Jim, how do you think our meeting with your prospective anchor tenant went?"

"Let me tell you Ned, I've been developing real estate for 30 years. The first tenant is always the hardest and these young lawyers are the toughest I've seen in a while."

"But the meeting went well, didn't it?"

"Well you certainly had all the answers for them—like when they asked about the lobby and you whipped out that 360° panoramic view. Or when they made that comment about the last time they moved. Their architect's documents were so messed up they didn't get their space on time. That extra month cost them a bundle. Then you showed 'em how you guys do it."

"Yeah, our new software is really working for us. Ever since we dumped our old CAD system, we've been much better off. I can't believe it took us so long to make the change."

"Well, it's terrific how you guys are saving me money and helping me fill up my buildings. The way we're going, your firm will be doing our next two towers. Why should I even bother with anyone else? You keep making me look good in front of some pretty pushy tenants."

"Thanks Jim! I'm happy to hear that. Anything else I can do for you now?"

"Yeah…Revit. Can you show it to me? I'm beginning to feel left out."

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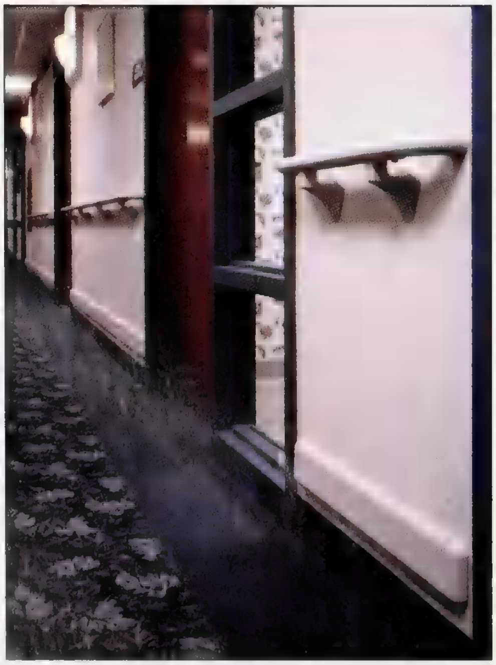

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Digital Product Reviews

Sketching made easy; managing printing costs; schedule on the go; CAD power

By Jerry Laiserin, FAIA

3D doodles

@Last Software—Sketchup

While the pros and cons of computer technology in architectural practice remain open to debate [DECEMBER 2000, page 166], one negative consequence that few question is the disruptive effect of CAD software on the visual thinking process. In nearly 40 years of development, no CAD vendor has perfected the simple technique of drawing a model in 3D by merely sketching the edges—an exercise that countless architects have practiced on countless cocktail napkins.

The CAD veterans who founded @Last Software developed Sketchup as a solution to this problem, and they have succeeded brilliantly. Sketching usable models in Sketchup's 3D interface is so easy that even rank novices can get up to speed almost immediately. This is valuable in firms where designers feel the complexity of conventional CAD interferes with their creativity, especially during the earliest preliminary or schematic phases. With Sketchup, early design thinking is easily captured in a format that can be exported to conventional CAD or to advanced rendering and visualization software. Regular CAD work can be imported into Sketchup for further study and refinement, avoiding the "round-trip problem" of lack of interoperability that plagues other modeling programs.

Sketchup isn't just for beginners. It has built-in tools for light and shadow studies, libraries of textures, and several patent-pending tricks for quickly manipulating surfaces into complex 3D shapes. For designers who resist the hard-edged look of most computer drawings, Sketchup provides a "jitter-line" mode that mimics the appearance of freehand drawing. Overall, Sketchup earns high marks for its innovative fusion of CAD-compatible modeling and cocktail napkin convenience. Highly recommended.

System requirements: Pentium 400 or better; 64MB RAM; Windows 95 and above; 20MB free hard disc space; 3D accelerated graphics card that supports OpenGL at 800x600 resolution or better.

@Last Software
2019 10th Street
Boulder, CO 80302;
303/245-0086
www.sketch3d.com

Contributing editor Jerry Laiserin, FAIA, provides strategic consulting services to architects.

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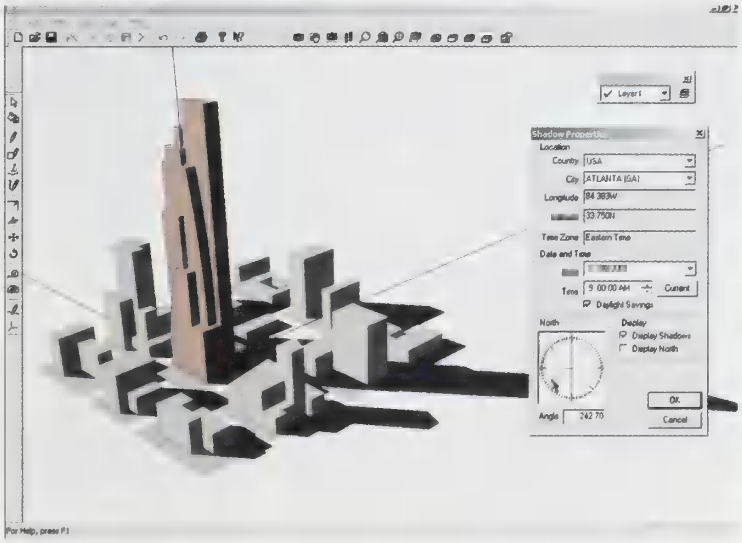

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Time Zone: Eastern Time
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Architects can sketch 3D models directly in Sketchup's software, and the results can be exported to CAD or rendering and visualization software.

The paper chase

Sepialine—Argos for Windows

With the 20th anniversary of the IBM PC fast approaching, the promise of a paperless office keeps receding. Every architect with a computer and a printer or plotter understands why. Viewing, reviewing, and checking CAD drawings demands check plots or half-size check prints, because computer monitor displays are too small and blurry for inspecting design work in progress. Attorneys recommend keeping hard copies of records whenever transmitting drawings electronically. Computers make generating paperwork such as memos, reports, minutes, and calendars so much easier that these documents, too, have proliferated.

Every sheet of bond paper or square foot of vellum printed represent costs that need to be captured and attributed to an appropriate project. Whether costs are absorbed into a firm's overhead, a project budget, or reimbursed by clients, capturing those costs accurately can be a tedious chore. Busy staff members dislike having to enter elaborate project codes to print or plot documents, especially when on a deadline.

Argos for Windows offers an elegant solution to these problems. Like Jason's boat in Greek mythology, Argos navigates a course to the "golden fleece" of print/plot cost recovery. Unlike conventional plot-management software, Argos logs printer/plotter output while at the same time scanning all computers on the network for unbilled activity; therefore, users can identify print jobs in advance, or plot first and fill in chargeback data later. Argos links to major financial accounting software used by A/E firms and can assemble cost data across multiple offices. Networked copiers and fax machines can be monitored as well, and Argos has an administrator-controllable threshold for no-charge convenience copies. Argos works on WindowsNT networks with any software that prints or plots to a Windows printer driver. In other words, Argos brings a benefit to any office that uses Windows and paper. Highly recommended.

System requirements: Any WindowsNT network, Windows software, and Windows-compatible printing or plotting device.

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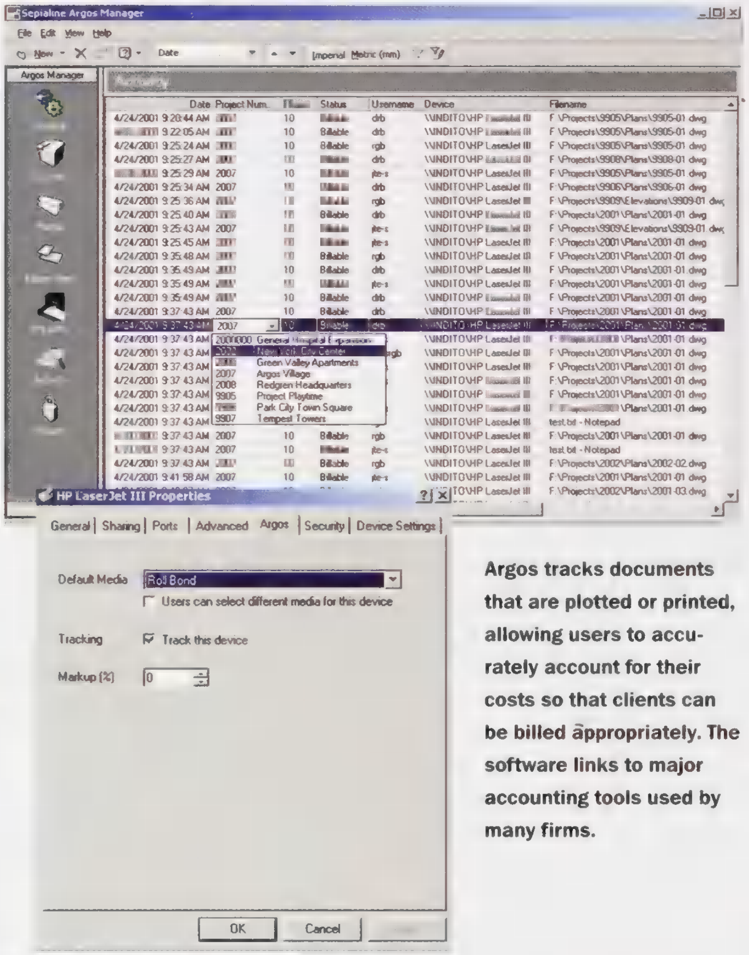

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2000000 General Hospital Expansion
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2007 Argos Village
2008 Redgren Headquarters
9905 Project Playtime
[illegible] Park City Town Square
9907 Tempest Towers

Default Media: Roll Bond

☐ Users can select different media for this device

Tracking: ☑ Track this device

Markup (%): 0

Argos tracks documents that are plotted or printed, allowing users to accurately account for their costs so that clients can be billed appropriately. The software links to major accounting tools used by many firms.

It's about time

AEC Software—FastTrack Schedule 7.0 for Windows, Macintosh, and handheld computers

We last looked at FastTrack Schedule two years ago, in version 6.01 ["Software Reviews," AUGUST 1999, page 43]. Then, as now, the software provided a balance of features carefully tailored to the project-management needs of architects. It has a simple, spreadsheet-like interface: Rows represent tasks, bar-graph style; columns represent duration in time. Drag-and-drop editing eases definition of project milestones and links among tasks. The software works on both the Macintosh and PC platforms and is compatible with management tools such as Microsoft Project or Primavera Project Planner.

New in version 7.0 are convenient features such as Quickstart project templates, "express" clock and calendar functions, and new preset activity fields. The new version also offers more powerful features, such as highlighting a project's critical path and setting of time and other constraints on project tasks and links.

Architects often carry project-management information with them to sites or client meetings so they can update project data while on the go. Schedule 7.0 addresses these needs with a companion version for handheld PCs using the Palm operating system (such as Palm and Handspring Visor) as well as Sony Clié devices. Although the small screen and limited graphics of handheld PCs make creating new schedules a tad tedious, portability is the real bonus with FastTrack Schedule 7.0.

System requirements: Windows—386/DX or better, 4MB RAM, Windows 95 or higher; Macintosh—PowerPC or better, 4MB RAM; System 8.6 or higher; Handheld PC—Palm, Handspring, IBM, or Sony, Palm OS 3.0 or higher, 200K RAM.

AEC Software, Inc.
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800/346-9413
www.aecsoft.com

Object lesson

Graphisoft—ArchiCAD

The current crop of architecture-specific CAD software—products such as Autodesk Architectural Desktop, DataCAD Plus, Revit, and Nemetschek Vectorworks Architect—strives to embody design intelligence rather than just to automate drafting. Design intelligence requires that building elements be represented by software objects—discrete bundles of program code that act as virtual representations of real building elements such as walls, doors, and windows. Typically, such objects exhibit a degree of parametric behavior, following predictable rules and constraints as designers size, modify, and link them with each other. The resulting integration of 2D and 3D representations, called the single building model or the virtual building, also contains attributes, or data links, that connect the parametric software objects to nongraphical information, such as cost, availability, or building-performance criteria.

Graphisoft's ArchiCAD has been delivering architecture-specific design intelligence since the mid-1980s. Previous versions pioneered seamless integration of 2D and 3D design and documentation, including the ability to edit in any view and have all edits reflected throughout a model and its associated drawings. ArchiCAD users have long enjoyed the productive benefits of automatically deriving detail drawings from design models and sharing their work with teammates. The latest version of ArchiCAD consolidates its stronghold near the top of the intelligent CAD pecking order, with features such as visualization and animation of construction sequencing; Web-enabled collaboration and annotation in 3D; and drag-and-drop insertion of building objects from electronic libraries or catalogs into design models.

Graphisoft is also a leader in the Building Lifecycle Interoperability Software (BLIS) Project [see "Digital Architect," page 195]. While many CAD vendors support the concept of interoperability, ArchiCAD has actively participated in advanced demonstrations of interoperability among CAD and other architectural software tools.

With such comprehensive features, plus crossplatform support that makes it equally accessible to Macintosh and PC users, ArchiCAD 7.0 should be on every design firm's software shopping list.

System requirements: Windows—PentiumII/300 or better; 128MB RAM; Windows 95 or higher; Macintosh—G3 or better; 64MB RAM; System 9.04 or higher.

Graphisoft U.S., Inc.
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FastTrack 7.0 is now available for handheld PCs, so architects can update project data on the go.

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CIRCLE 81 ON INQUIRY CARD

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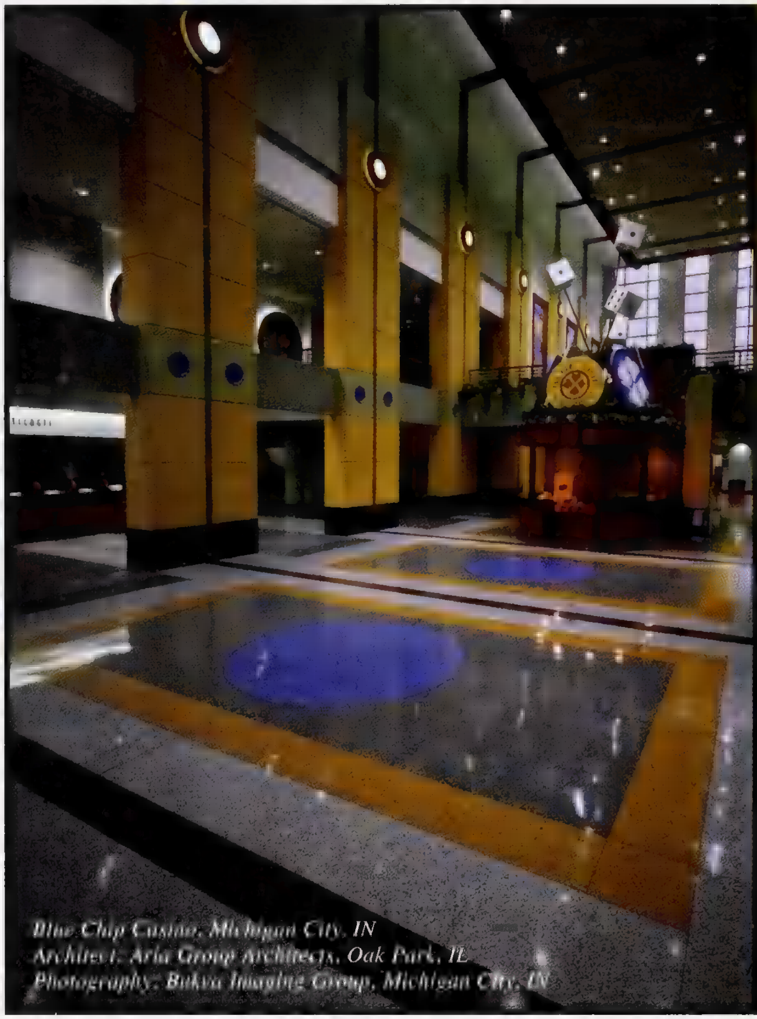
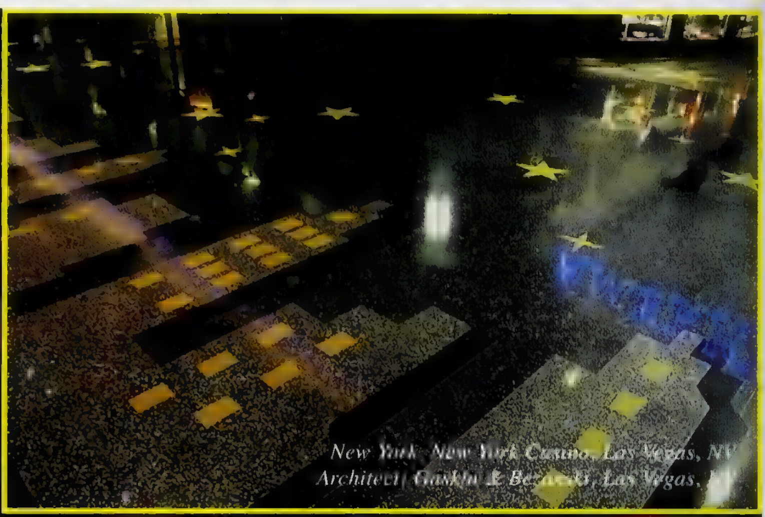


Blue Chip Casino, Michigan City, IN
Architect: Aria Group Architects, Oak Park, IL
Photography: Bukva Imaging Group, Michigan City, IN



New York, New York Casino, Las Vegas, NV
Architect: Gaskin & Bezanski, Las Vegas,

Motown Cafe at New York, New York Casino, Las Vegas, NV
Architect: Haverson Architecture & Design, Greenwich, CT
Photography: Opulence Studios, Las Vegas, NV

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CIRCLE 82 ON INQUIRY CARD

New Products

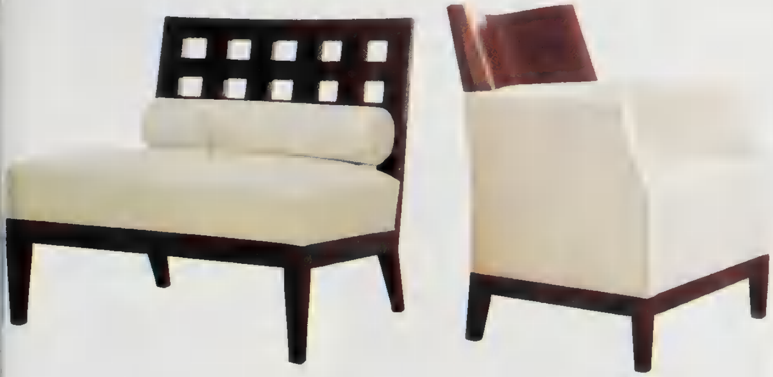
The office furnishings category extends far beyond desks and chairs: workstations, occasional tables, storage systems, and lounge, side, and ergonomic seating work together to furnish the office environment. Most of the products shown on the following pages will be introduced at NeoCon 2001, held this year from June 18–20 in Chicago. *Rita F. Catinella*

Digital printed designs allow office system to express itself

With the DOT program, two Resolve systems never need to look the same.

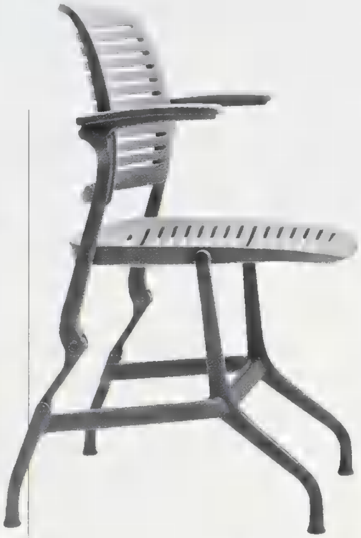
Herman Miller has launched a program that enables customers of its Resolve office system to choose or personally create digitally printed designs for their system components, including boundary screens, rolling screens, flags, and canopies. The Design on Textile (DOT) program offers customers the choice of either selecting images from an expanding range of designer collections assembled by Herman Miller, or creating their own custom graphics for digital printing on Resolve components. The existing collections feature a range of design ideas and image styles from which to choose, including natural, graphic, abstract, and photographic.

The second choice, dubbed Customers' Own Image (COI), gives designers the freedom to prepare visual treatments, including corporate logos, slogans, pattern designs, and colors. Resolve screens or flags can also be used to identify departments and assist visitors and employees in finding their way through a company's corridors and open spaces. Since the Resolve screens are translucent, the DOT images change their appearance when viewed in varying light and from different perspectives. 800/851-1196. Herman Miller Inc., Zeeland, Mich. **CIRCLE 200**



New furnishings collection by designer Michael Vanderbyl features parawood

Bernhardt Design has launched its first collection by Michael Vanderbyl, consisting of four lounge pieces, four side chairs, and two table series. The collection represents another first for the company—the use of an alternative lumber source, parawood, which is native to the Amazon region of South America. This textured and richly hued dense wood possesses the characteristics of maple, but because it is not clear-cut, environmental impact and cost are kept to a minimum. The collection comprises generously sized lounge pieces, as well as smaller-scaled wood side chairs and tables. The Helena chair (far left) and matching ottoman have a strong wood structure, large-scale cushions, and tight upholstery. The tailored look of the upholstered seat cushion and bolster creates clean lines and silhouettes, with a latticelike parawood back. The Madison chair (near left) envelops the user with an exceptionally deep seat for extra comfort. The collection is available in a variety of custom Bernhardt finishes and upholsteries. 828/758-9811. Bernhardt Design, Lenoir, N.C. **CIRCLE 201**



Meeting room options

WizardSigns is Steelcase's first line of technology products. These touch-sensitive, flat-screen display signs are Internet and network addressable. RoomWizard (below) takes the frustration out of meeting room management by providing information about meeting spaces, allowing people to book meeting rooms online, and providing at-a-glance information about the room's availability and occupants. Also new from Steelcase is Cachet (above), a seating option that automatically adjusts its balanced-action rocker motion to the person sitting in it. The stacking chair is ideal for mobile workers and for use in meeting rooms, learning environments, cafes, and waiting rooms. 888/STEELCASE. Steelcase Inc., Grand Rapids, Mich. **CIRCLE 202**

For more information, circle item numbers on Reader Service Card or go to www.architecturalrecord.com Advertiser & Product Info

New Products

▲ Head of the class

Da Capo seminar furniture can be specified for convention centers, auditoriums, conference rooms, or seminars. The line features armrest supports made of injection-molded aluminum that can be added on-site. Writing tables, left or right, can also be added at any time. The patented ganging device encourages the combination of armchairs and side chairs in the same row. Da Capo also provides row and seat numbering systems. 631/589-7337. Kusch+Co., Bohemia, N.Y. **CIRCLE 203**

► Elbow room

KI's 700 Series Curve System expands to serve as both a filing and storage system. With 1½-inch modularity, the system allows for a variety of storage configurations. Using a 10½-inch drawer, instead of the standard 12-inch drawer, provides for 25 percent more storage. The system offers curved pulls in a range of colors, a radiused frame, both gloss and textured finishes, and the choice of dimples or no dimples. 800/424-2432. KI, Green Bay, Wis. **CIRCLE 204**

► A chair for Agent 99

Codesigned by Haworth and Germany's ITO Design Group, X99 features translucent mesh or upholstery in a mid-back task chair, high-back executive chair, guest chair, and seminar seating. Both the task and executive seating have a German-engineered three-point pivot mechanism treating the back/hips/legs region as a single mobile unit; an automatic free-floating forward tilt; a single position backstop; and height and tension adjustment. Silver, black, or chrome finishes are available. 800/344-2600. Haworth, Holland, Mich. **CIRCLE 205**

▲ Status symbol

The surface and pedestals of Dakota Jackson's modern interpretation of the classic partner's desk are connected by a light metal arch that echoes the shape of a suspension bridge. The desk can accommodate numerous seating options and separate workstations. 718/786-8600. Dakota Jackson Inc., Long Island City, N.Y. **CIRCLE 206**

▼ Gourmet coffee table

The 47-by-23½-inch rectangular glass top on the freestanding Sistema Two occasional table appears to hover above a pair of parallel, arced legs. Curved and perforated sheet metal joins the legs across a broad center section. The tempered glass tabletop, with smoothly polished beveled edges, features a large sandblasted rectangular center section. 800/566-5766. Kron USA, Pompano Beach, Fla. **CIRCLE 207**

◄ Kick it up a notch

Turnstone introduces Kick, a new midmarket systems furniture line. The flexible components, including panels, work surfaces, storage, and work tools, are designed to provide solutions for companies ranging from startups to multinationals. The system will be on display at Turnstone's permanent e-tail store/showroom during NeoCon. 616/698-4897. Turnstone Office Furniture, Grand Rapids, Mich. **CIRCLE 208**

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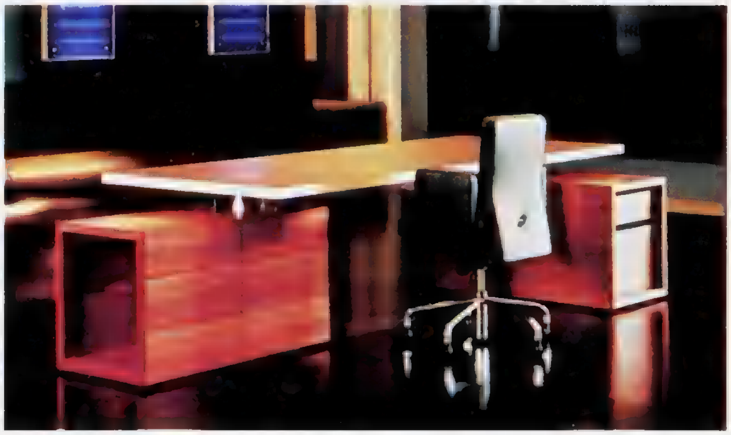
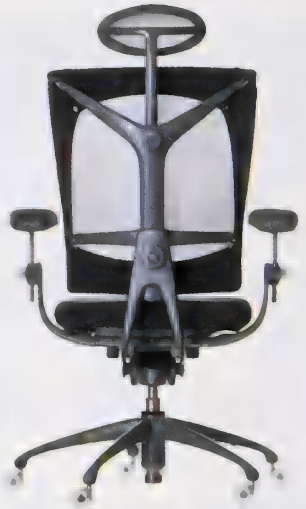
CIRCLE 83 ON INQUIRY CARD



▲ U.S. premiere

Furnishings from Belgium manufacturer Bulo are available for the first time in the U.S. through D'Apostrophe's 8,000-square-foot showroom in New York. The desk in Bulo's Normal collection, created by French architect Jean Nouvel, features a tabletop resting on a drawer unit and a credenza. The three parts are connected by two star-shaped elements of anthracite gray coated steel. The credenza is positioned at a 90-degree angle and has two lateral doors. Storage units and meeting tables in different size and variations complete the range. Normal also offers integrated wire management. 212/334-5045. D'Apostrophe LLC, New York City. **CIRCLE 209**

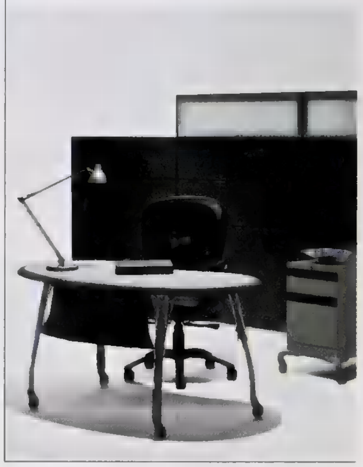


▲ Nap time, revisited

Vitra believes that sitting, standing, and even sleeping are part of a full day's work, and a chair should adjust itself accordingly. Ypsilon's mechanics allow a smooth transition when sinking back from the upright into the lounging position. It also features a Techno Gel Pad that provides lumbar support and an integrated coat hanger. 212/539-1900. Vitra Inc., New York City. **CIRCLE 210**

▼ No squeaky wheels

The Marbles line of mobile furniture and accessories features roller blade–style wheels, available in clear and flint, which roll more quietly than conventional office casters. Marbles' table-height mechanism locks at nine positions between 27 and 36 inches, including an ADA-required stop at 32½ inches. A "Storage Creeper" converts Allsteel Premium laterals and pedestals into mobile warehouses. 319/262-4800. Allsteel Inc., Muscatine, Iowa. **CIRCLE 211**



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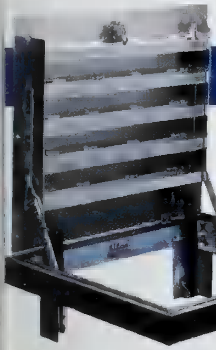

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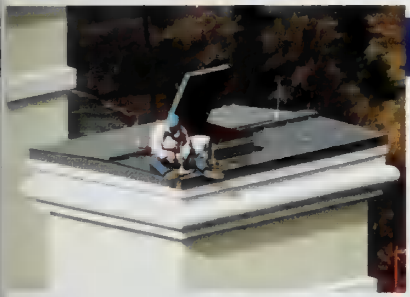

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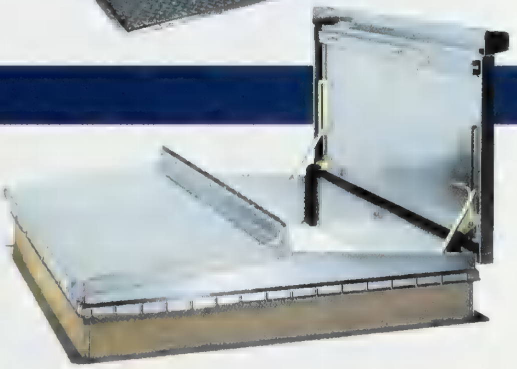

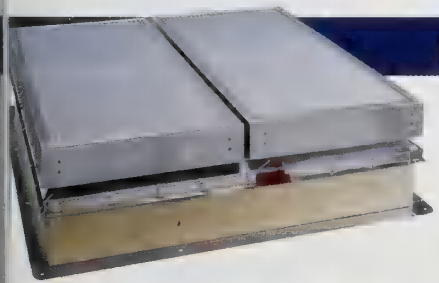

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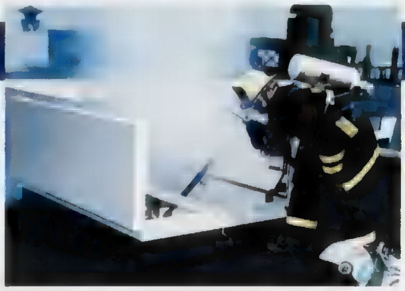

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New Products

▼ Double your options

Trendway introduces Choices², which functionally and aesthetically integrates with all other Trendway lines and includes a Beltline with power and data accessibility at work-surface height. Choices² consists of panel-hung and freestanding products, including filing cabinets, storage units, and tables that together create the foundation for a variety of work environments. 800/748-0234. Trendway Corporation, Holland, Mich. **CIRCLE 212**

▲ Swiss seats

Duca is a Swiss-designed, ergonomic chair available in both executive and conference versions. Duca features a Syncro-Dynamic mechanism that allows continuous adjustment and permanent back contact. Duca is available in top-grain, fully aniline-dyed leather or fabric upholstery. 800/631-1186. Dauphin N.A., Boonton, N.J. **CIRCLE 213**

► Don't mind the wait

The Aryton collection was inspired by the height of the French Empire period, from 1804 to 1864. The lounge seating offers a single-seat upholstered lounge chair, two-seat settee, or three-seat sofa with sweeping arm profiles in a compact floor footprint. 800/456-9672. Geiger Brickel, Atlanta. **CIRCLE 214**

▲ For the computer guys

PowerPlane supports heavy power and data users requiring uncommon ergonomic considerations. PowerPlane offers Shelf Plane with a wire backstop for overhead storage, Technology Plane for computer monitor and equipment, Reference Plane for reference material, and a Keyboard Plane wide enough to accept two keyboards. 800/263-2387. Egan & TeamBoard, Woodbridge, Ontario. **CIRCLE 215**

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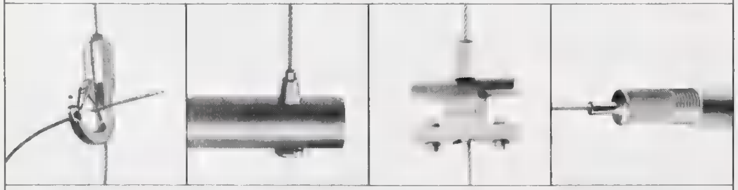

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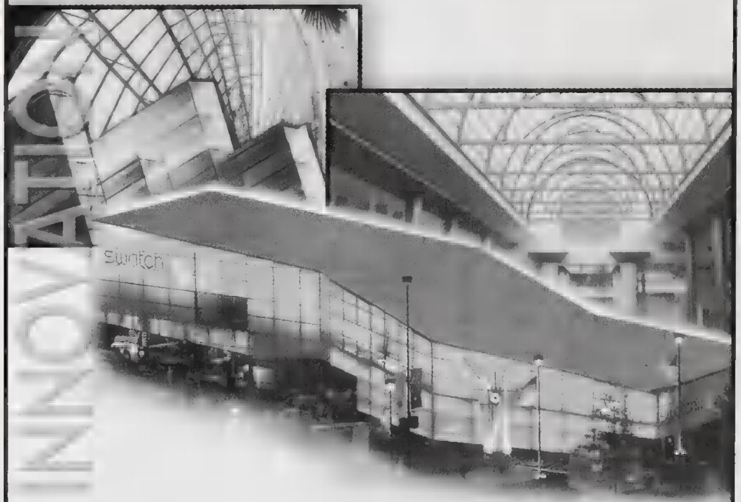

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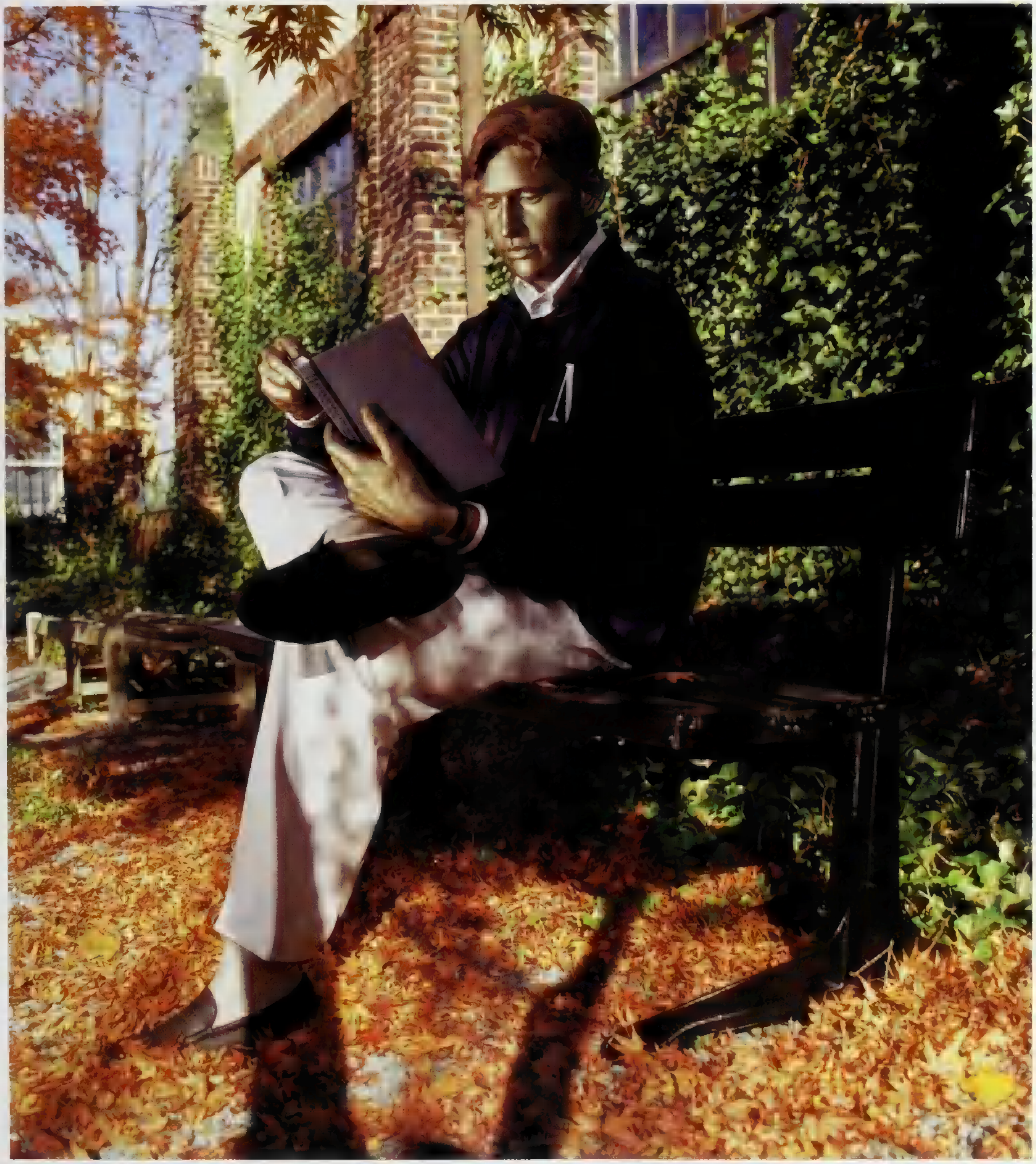

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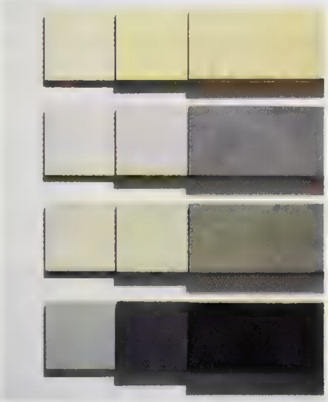
CIRCLE 90 ON INQUIRY CARD

Product Briefs

▸ Cool stool

Introduced at the Milan Furniture Fair in April, the adjustable-height stool Zanzibar, designed by Raul Barbieri for Rexite, may be the next ubiquitous stool for the home, office, or bar. Thanks to a gas lift mechanism, the height is easily adjusted by pressing any one of the three colored buttons. Zanzibar comes in six colors, has an ergonomic polymer seat to encourage correct posture, and a leg and base in chromium-plated steel. 39/0290390013. Rexite spa, Cusago, Italy. **CIRCLE 216**

▸ Walking a colorful plank

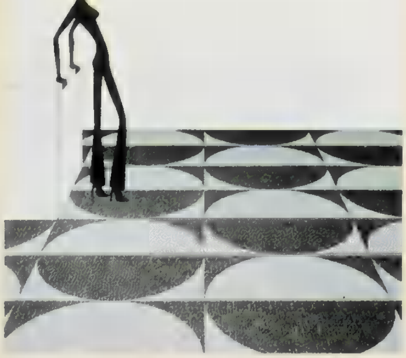


Perlot, Ann Sack's first entrée into hardwood plank, is available in two-, three-, four-, and six-foot lengths. Constructed of a maple wearlayer over a solid lumber core and a solid lumber backer, the planks have undergone a total of 14 separate steps in the finishing process, including an abrasion-resistant finish. Perlot is available in 12 earth-tone shades ranging from grays to yellows, greens, and blues. 310/406-8801. Ann Sacks, Portland, Ore. **CIRCLE 218**

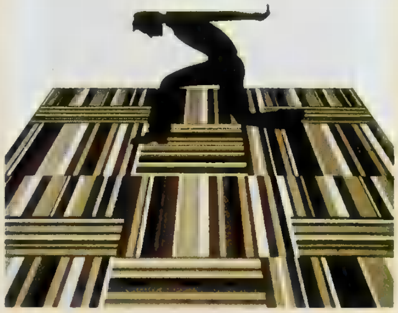
▴ Lordly lavatory

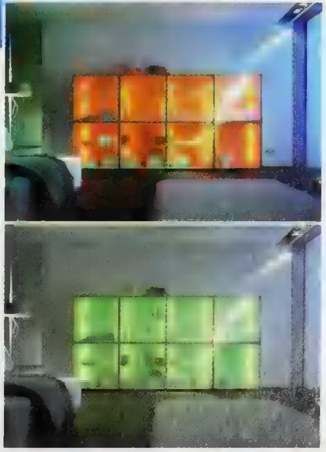
Architect Lord Norman Foster's new collection for Duravit includes sanitary ceramics, bathroom furniture, and accessories. Two circles, side by side, form the basic oval shape that is the foundation of Foster's entire range. His washbasin (above) has generous dimensions, yet retains a narrow rim. It is available in a floor-standing or semi-pedestal version in various widths. Mirrors, medicine cabinets, toilets, bidets, and vanity units complete the line. 888/DURAVIT. Duravit, Duluth, Ga. **CIRCLE 219**

Product of the Month Oxygen



Milliken Carpet, Commercial Markets, and Gensler have teamed up to launch Oxygen, a modern modular carpet collection that the companies believe will be a new graphic concept for the floor. The collection was created for Milliken by Gensler and marks the first time that the worldwide architectural and design firm has put its name on a product. Eight design groups and 15 patterns can be mixed and matched to allow designers to compose their own graphic art on the floor. With names like Float, Catwalk, Kiss, Screen, Shag, Wink, Fizz, and Glam, the patterns suggest images such as bubbles, fizz, striped blocks, and TV screens, and textures such as linen, nubby cotton, and tissue paper. Each carpet is manufactured with precise modulation, which allows multiple patterns to be mixed and matched, checkerboarded, turned in 90- or 180-degree angles, or placed randomly throughout the space. As with all modular carpets from Milliken, Oxygen can be renewed through the company's Earth Square program. 800/241-4826. Milliken Carpet, LaGrange, Ga. **CIRCLE 217**





▴ Moody cabinets

The modular cabinet system "eo" consists of cubes with glass walls and doors held in a filigree metal structure. With a remote control, users can mix every conceivable color tone, from sunflower yellow to deep violet; LED strips emitting the primary colors are installed in the back edges of each cube. Four storage variations are available for a CD system, a minibar, dishware, or wine shelves. 49/05242121. Interlübke, Rheda-Wiedenbrück, Germany. **CIRCLE 220**

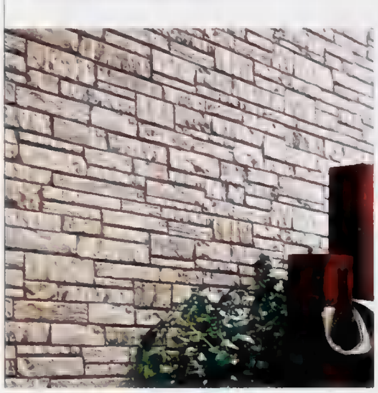
Product Briefs

▲ Catch some air

With more than 14 million skateboarders and in-line skaters in the U.S. and only 600 skate parks available for them to share, there is a huge demand for SkateWave, the new customizable and reconfigurable skate park system. Each modular obstacle is constructed of steel with a TekTrak powdercoat finish on the transitions and decks. 866/SK8-WAVE. SkateWave, a Division of Landscape Structures Inc., Delano, Minn. **CIRCLE 221**

▼ Covered inside or out

Nichiha manufactures composite panels for exterior and interior use with a combination of portland cement and fibers. The panels are prefinished in the factory, with a permanent coating which the company claims does not require any maintenance after installation. Panels are 18 by 180 inches and are installed over supplied metal clips. All patterns include matching corner trims. 866/424-4421. Nichiha USA, Atlanta. **CIRCLE 222**



▲ Cutting the grass

The bamboo flooring and panels from TimberGrass are harvested from managed growth areas in China. Since it is a grass, bamboo regrows every six years from the same plant it is cut from. The prefinished flooring has a five-coat finish system, uses environmentally safe adhesives, and is available in natural blond or caramelized colors. TimberGrass carries both residential and commercial warranties. 800/929-6333. TimberGrass LLC, Bainbridge Island, Wash. **CIRCLE 223**

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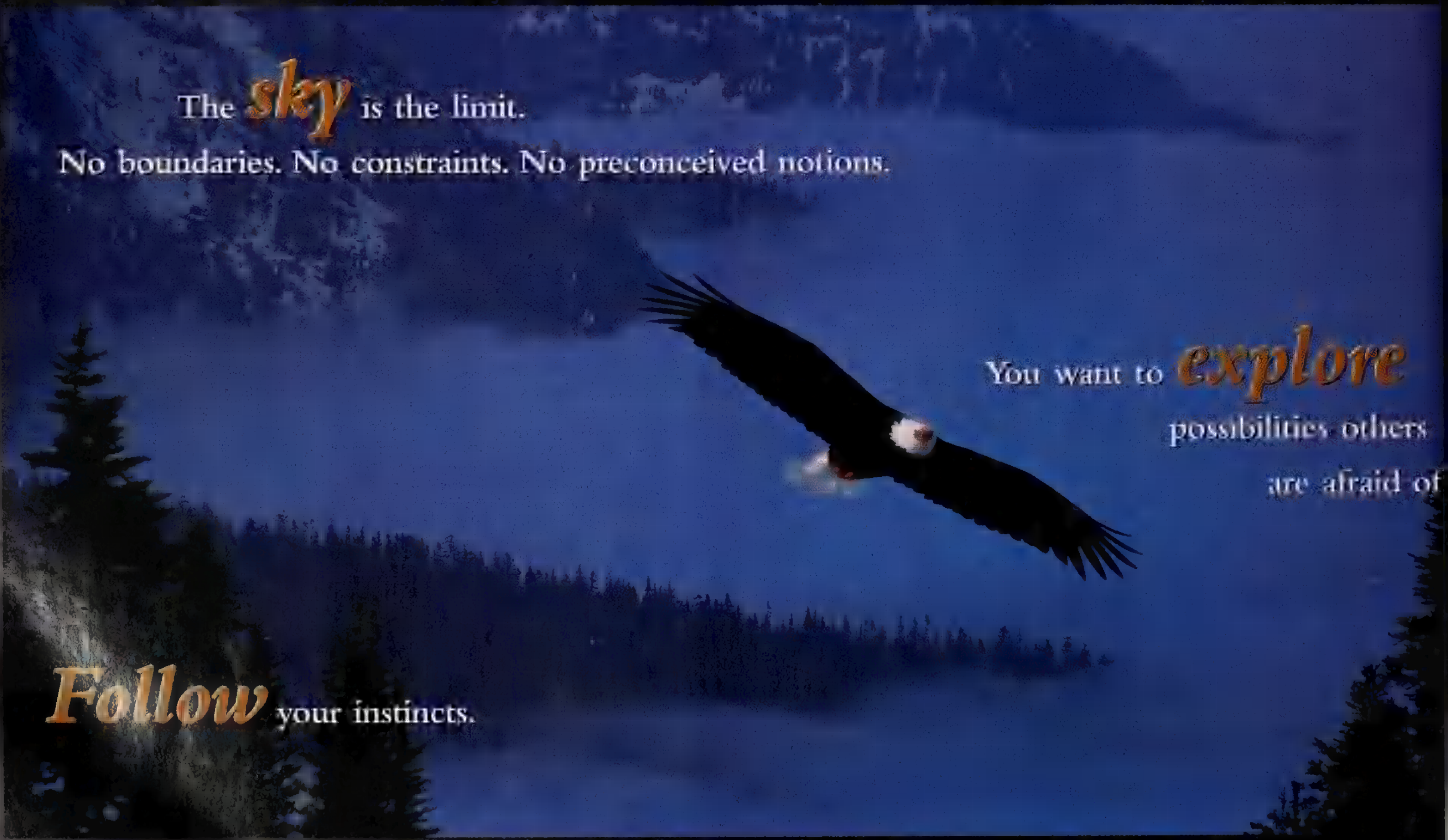
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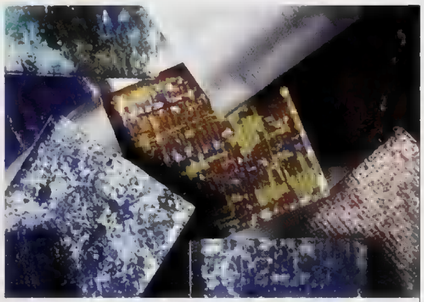
Product Briefs

► Textured glass floors



UltraGlas for Mannington is a collection of kiln-formed, heat-tempered, 18-by-18-inch embossed architectural floor tiles for corporate, hospitality, retail, and institutional environments. The three textures include the finely ribbed Lineage, the natural stone look of Forged, and the uneven surface of UltraSlate. Each is available in 16 hand-applied colors and contains up to 30 percent recycled glass. 800/241-2262. Mannington Commercial, Salem, N.J. **CIRCLE 224**

◄ More bark than bite

Produced from the renewable bark of cork trees, Unicork tiles feature 12 color patterns including Lava Blond, Lava Ruby, and Organika Green. Unicork is available in a standard five-millimeter gauge in a 12-by-24-inch tile. 877/843-8184. To Market, Washington, D.C. **CIRCLE 226**

► Volcanic design

Pyrolave manufactures glazed Andesite lava stone, which is quarried from the lava flows of the Nugere crater in central France. This material can be integrated into countertops, floor and wall coverings, swimming pools, tabletops, and more. High-temperature enamel firing at 1,868 degrees Fahrenheit reinforces the natural durability of the stone and gives it an impervious surface. 312/222-1237. French Technology Press Office, Chicago. **CIRCLE 225**

◄ Fancy flushometers

Sloan presents the Guildmark Collection of faucets and flushometers with a selection of high-end finishes. Polished brass, lustre gold, satin, nickel, and chrome finishes are available for hardwired and battery-operated Royal, Royal II, and Continental flushometers, as well as Optima and Optima Plus touchless faucets. 800/745-0800. Sloan Valve Company, Franklin Park, Ill. **CIRCLE 227**

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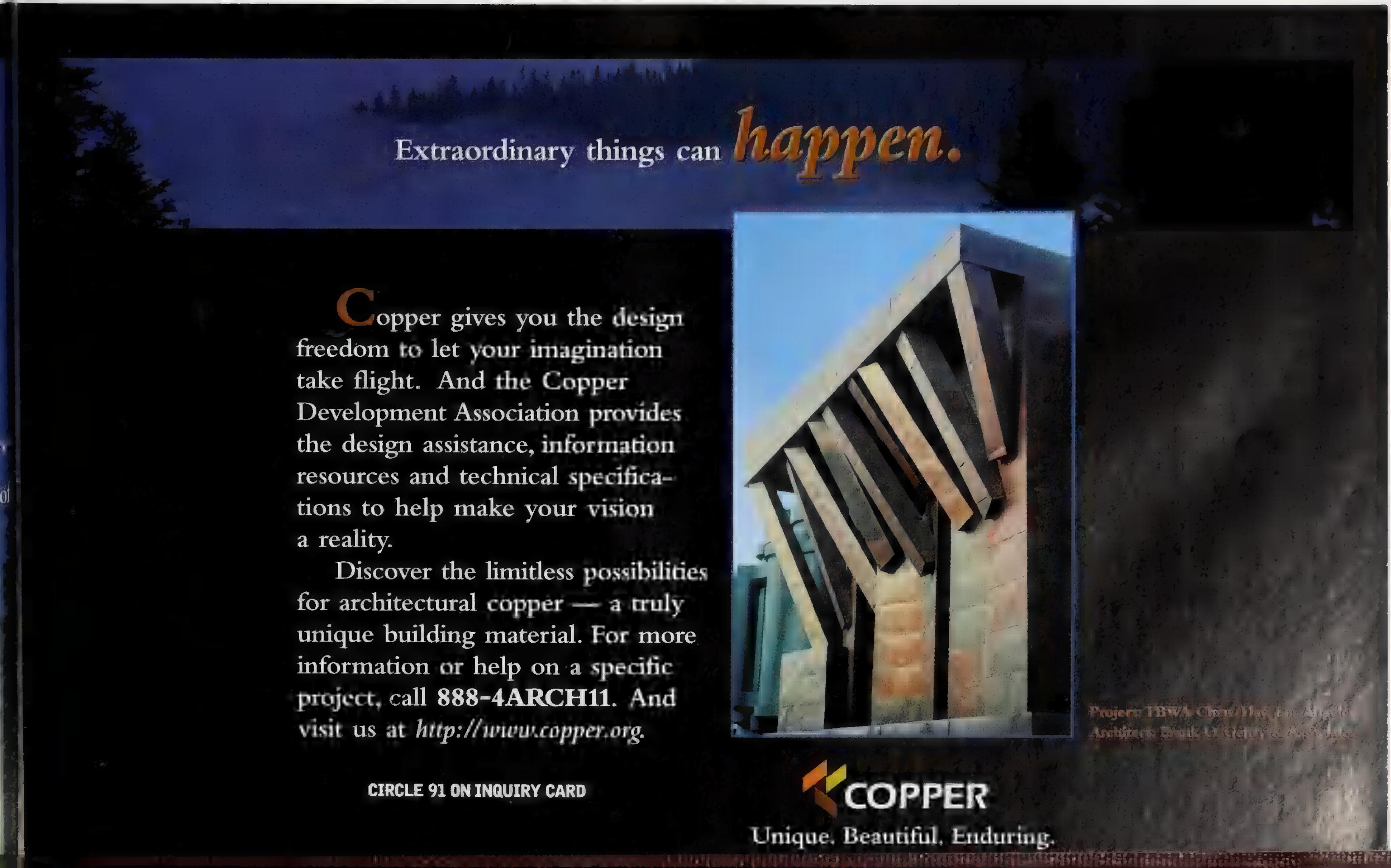

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Product Literature

Custom closet CD

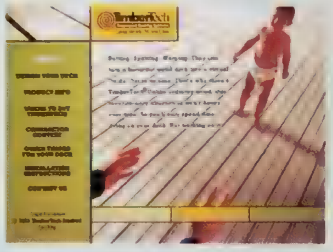
ClosetMaid's new 3-D *Custom Closet Design* program allows the user to create a custom closet in minutes, making it possible for customers to view their new storage space in a detailed, realistic 3-D rendering. 800/874-0008. ClosetMaid, Ocala, Fla. **CIRCLE 228**

Projection screen catalog

The 130-page *Power in Presentation* catalog has been designed with 10 individual sections. Each section contains detailed information on a specific presentation product line, as well as educational information on selecting the correct projection screen for every environment. 800/622-3737. Da-Lite Screen Company Inc., Warsaw, Ind. **CIRCLE 229**

NEW SITES FOR CYBERSURFING

Wood composite alternatives for decks **www.Timbertech.com**



An online exhibit of furniture by six New York designers **www.circline.com/21**

The PVC Alternatives Database featuring over 200 products from companies based in 17 countries **www.greenpeace.org.au/pvc**

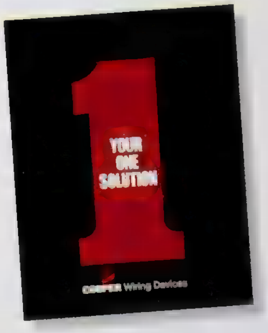
CAD drawing library with downloadable files to incorporate Milgard windows into project specs **www.milgard.com**

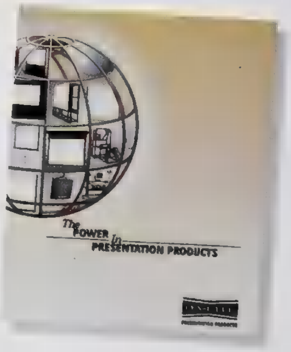
Electrical wiring devices

Cooper Lighting's new *Your One Solution* brochure provides electrical wiring contractors, distributors, and specifying professionals with a guide to the company and its electrical wiring devices. Products featured in the brochure include pin and sleeve devices, manual contractors/disconnect switches, and hospital- and specification-grade switches. 718/937-8000. Cooper Wiring Devices, Long Island City, N.Y. **CIRCLE 230**

Roof system catalog

The Siplast *Roof Insulation Systems* catalog describes in detail Siplast's ZIC, Zonocel, NVS, and Insulcel roof insulation systems. The catalog also offers a comparative analysis of Siplast roof insulation versus ordinary rigid board. The full-color catalog is illustrated with in-progress job photographs and cutaway diagrams. 800/922-8800. Siplast, Irving, Tex. **CIRCLE 231**





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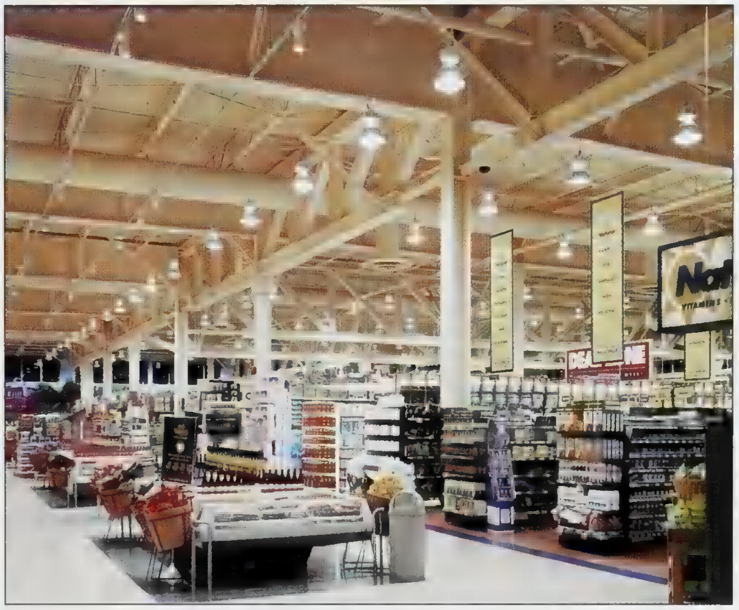

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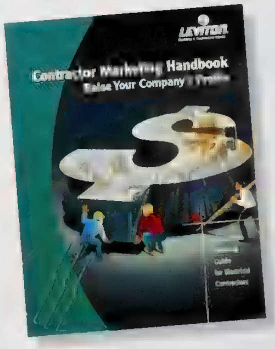
Product Literature

Steel rebar protection
The Concrete Reinforcing Institute offers its most recent *Anti-Corrosion Times* newsletter. The eight-page newsletter has industry news, applications, and developments on fusion-bonded epoxy coating for corrosion protection of steel rebar. As in each issue, the newsletter features projects that use epoxy-coated rebar in concrete construction. 847/517-1200. Concrete Reinforcing Steel Institute, Schaumburg, Ill. CIRCLE 232

Marketing primer
Leviton now offers a handbook that provides electrical contractors with step-by-step instructions on how to use basic marketing practices and principles to plan for increased growth and profitability. The *Marketing Handbook* is designed to give electrical contractors a comprehensive overview of the marketing process. 800/323-8920. Leviton Manufacturing Co. Inc., Little Neck, N.Y. CIRCLE 233

Newest window CD-ROM
The updated version 3.4 EFCO ARM CD-ROM is now available. It replaces all previous versions and will run on any Web browser using HTML. This CD gives easy access to EFCO's detailed overviews, specifications, and detail drawings, and it makes CAD files easier to download. All information on the disc can be printed on a laser or ink-jet printer. All EFCO ARM CDs are programmed with an automatic expiration date to ensure the user has the most current information. Version 3.4 expires on June 1, 2002. 800/221-4169. EFCO Corporation, Monett, Mo. CIRCLE 234

Granite brochure
Cold Spring Granite Company has released a brochure showcasing the variety of standard and proprietary finishes it offers. The brochure pictures each finish in tile and slab form while describing the manufacturing process that is used to create the subtle variations in color, tone, and texture and to enhance functionality. Among the 19 finishes featured, Cold Spring introduces two new ones: the Diamond 100 and Diamond 200. Both are created with high water pressure, which exposes the granite crystals and achieves a constant medium and coarse textured surface. 800/328-5040. Cold Spring Granite Company, Cold Spring, Minn. CIRCLE 235



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ANSWERS

Questions appear on page 170. To receive CES credits, fill in the education reporting form below or on our Web site (www.architecturalrecord.com).

1. Since this project consisted of multiple buildings, the analysis entailed a methodical series of tasks. The original building types and their existing layouts were identified; each building's physical condition was evaluated; the site's infrastructure was documented; zoning and permitted uses were reviewed; and programming for new users was undertaken. Documentation included the mechanical, electrical, plumbing, and structural systems; windows, doors, roofing, exterior wood and masonry assemblies; and interior finishes. Code review included restrictions due to historic preservation requirements of the New York City Landmarks Preservation Commission.

2. With Fort Totten's transfer from the United States Army to New York City, its use changed from military defense and housing to facilities that will support the needs of a large city. It will serve as a training center for the fire department, a public park, small parks concession, and other unspecified city use.

3. Many of the existing buildings from the 1950s and '60s will be demolished to make space for parkland. Other structures, which are part of a New York City historic district, are to be retained, rehabilitated, and reused. All the major infrastructure systems will require replacement or upgrading. The domestic water-supply system will be replaced, the storm drainage and sanitary sewer systems will be reconstructed, the electrical distribution system will be upgraded, a communications duct and natural-gas distribution network will be installed. Parking and a network of public streets will be developed.

4. A needs assessment was conducted using questionnaires and interviews to collect input from the users of the spaces in order to determine their current and future space requirements. From this data, a program showing spatial needs was developed. The architects then matched these spatial requirements to the existing spaces while trying to consolidate centralized facilities in existing structures, with rooms sized and configured in accordance with program requirements.

5. After analysis, buildings were grouped into nine renovation scenarios, depending on the amount of work required. The categories ranged from routine interior and exterior maintenance work to significant exterior restoration work and complete interior remodeling. A detailed cost estimate was prepared for one example of each of the nine renovation types. Based on the cost for one example, the cost per square foot was calculated and applied to all the buildings within each of the nine types. This was projected to be the overall cost of rehabilitating all buildings on the site. These estimated costs were then combine with the costs of upgrading the balance of the site, and the total sum was used to determine the overall feasibility of the proposed development and to secure funds.

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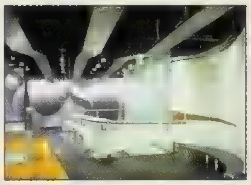

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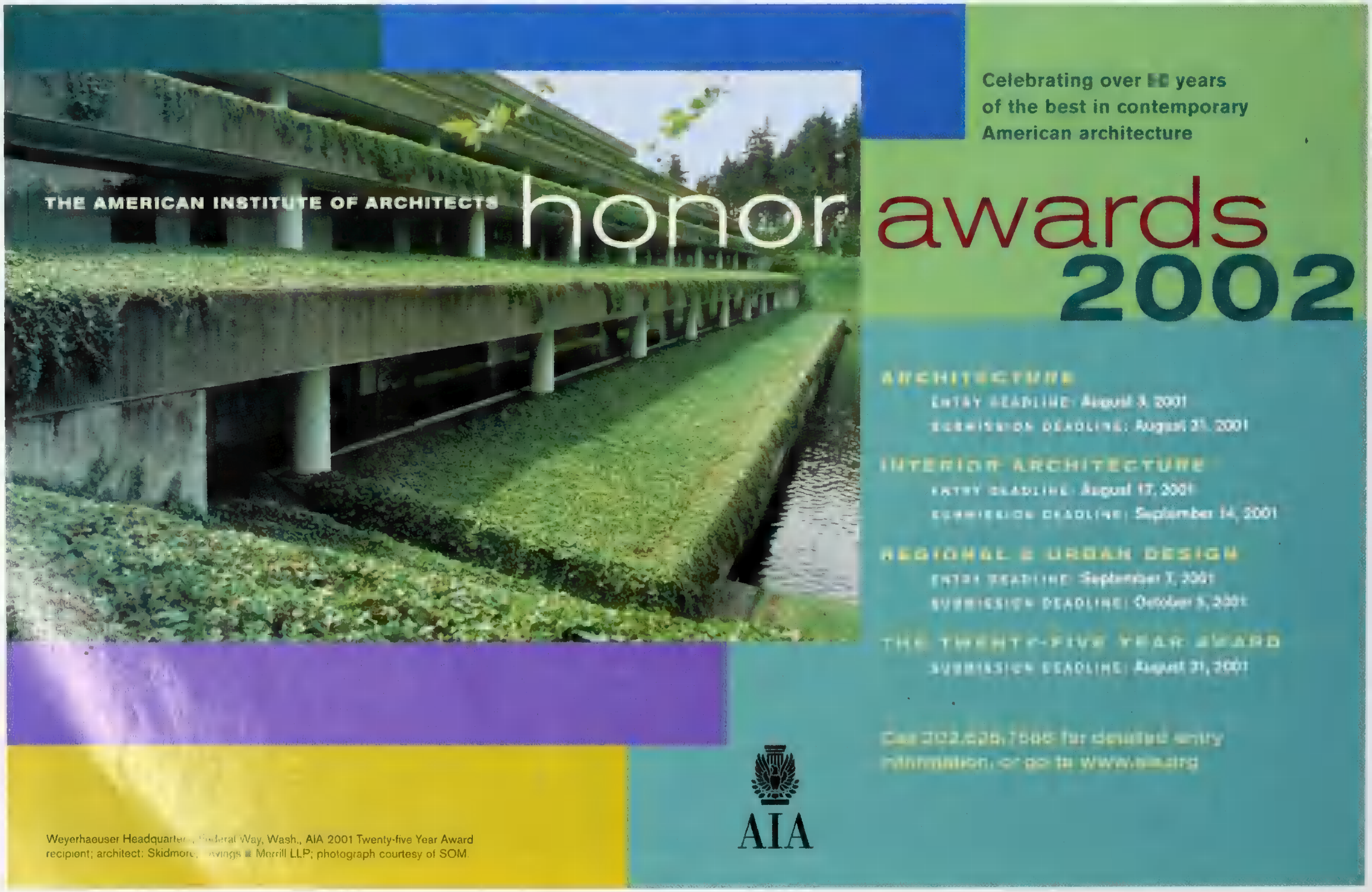

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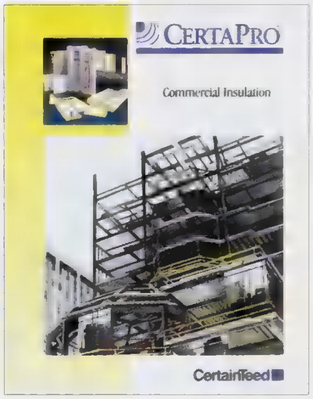

In this 45-page, full-color catalog, CertainTeed will give you the full story on its nine CertaPro products and their thermal, acoustical, fire safety, ventilation and moisture-resistant properties. Also features a guide for commercial building specifications and a glossary of terms. All you need to know about commercial insulation: 1-800-233-8990.

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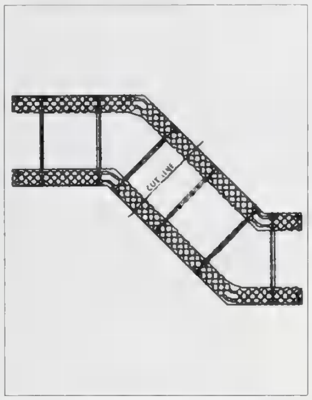
Arxx Building Products Product Announcement



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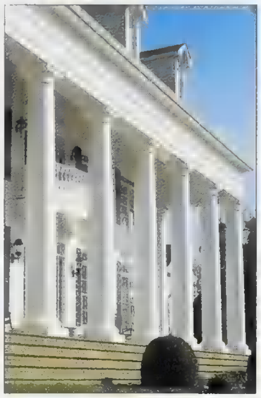

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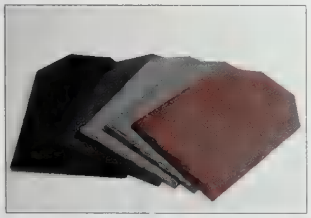
Celestial Slate Tile



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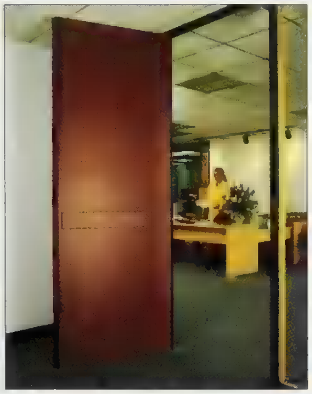
Applications



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Openings

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Acorn Engineering Co.

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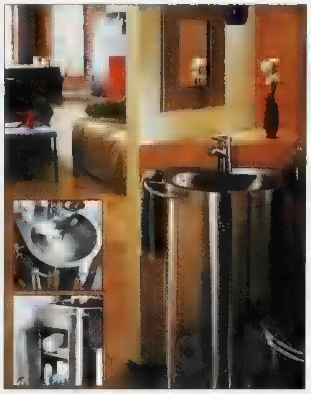
NEO-COMBY



The NEO-COMBY, is a combination toilet and basin fixture constructed of heavy-gauge stainless steel, perfect for all types of bathroom applications. Its features include a vertical storage space with adjustable shelving, an integral towel bar and a built-in bath tissue holder. The exclusive NEO-METRO Collection includes stainless steel washbasins, tubs, toilets, urinals and other fixtures. Call (800) 591-9050 or visit www.neo-metro.com.

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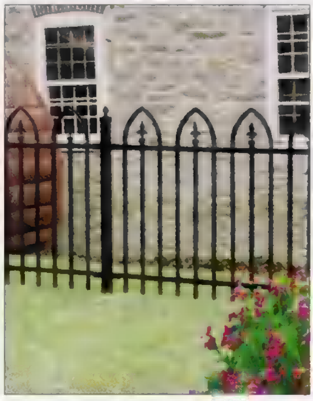

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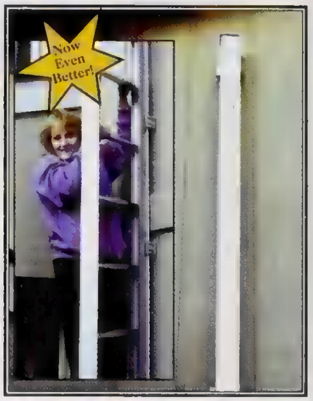

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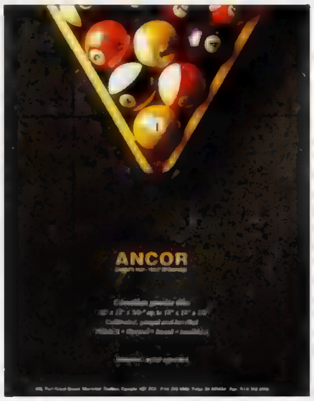

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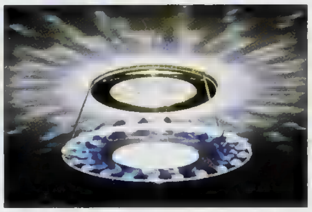
Contemporary Crystal Creations



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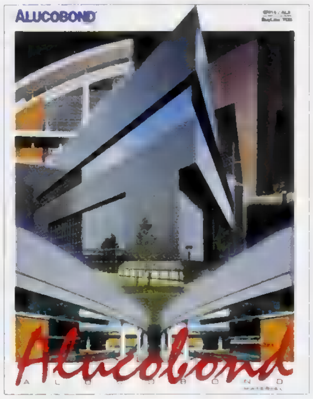

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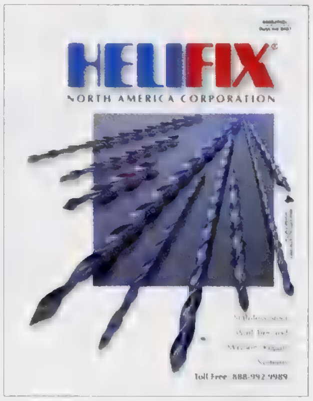

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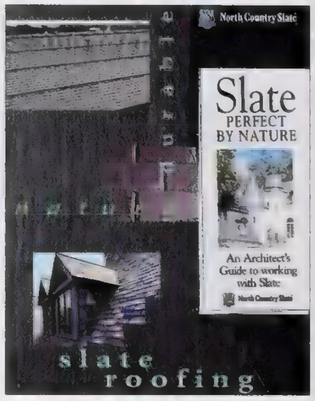

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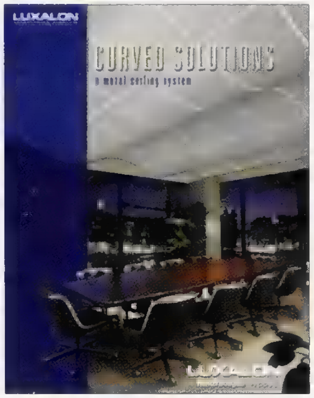

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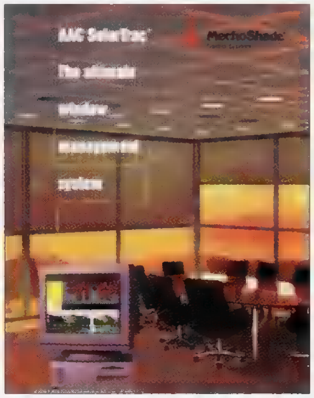

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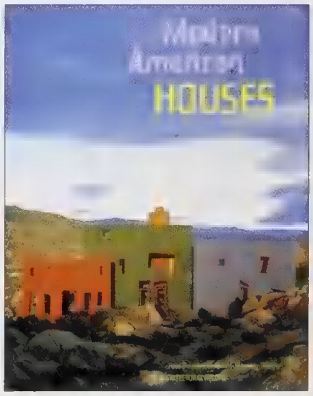

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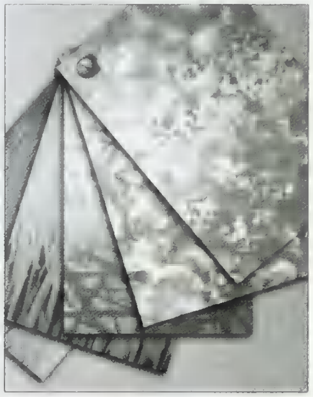

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Projects of past winners and runners-up are featured in the *ICU Design Video and Booklet*. The winner of the 2002 award and entries receiving honorable mention will be added to this publication. The package is a valuable tool for ICU design teams looking for ideas on everything from space planning to details. *Critical Care Unit Design & Furnishing* will help ensure that all team members optimize their contribution to the design effort, from concept to completion. Call SCCM at 714-282-6000 for more information about these products.

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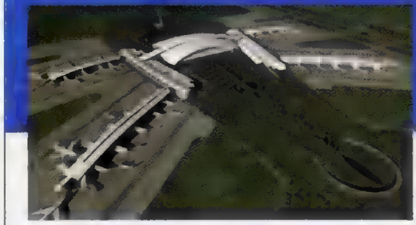

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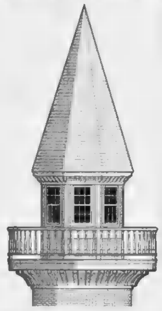

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Ray Anderson: Carpet maker with a conscience

Interviewed by Deborah Snoonian, P.E.

Ray Anderson may be the only CEO who begins speeches by asking audience members to hug each other. It creates a bond, he says, among his "fellow astronauts on Spaceship Earth." The founder and president of Interface, the world's largest manufacturer of carpet tiles, is on a mission: make carpet without using petroleum. It's a tall order for an industry that relies on nylon and polyester as its raw materials. Anderson also pioneered another concept: carpet leasing. When clients need carpet replaced, Interface takes it back and recycles it, thereby diverting the waste from landfills. The company also researches ways to make new carpet using less raw material and higher recycled content.

Q: *You've said there's no such thing as a sustainable product.*

That's right. Certainly not in our industry. When you talk about how sustainability should really be defined, it means taking nothing from the earth that's not naturally renewable throughout the whole supply chain. A sustainable product would reflect those attributes, having been produced by processes that reflected those attributes, manufactured in facilities that reflected those attributes, by people who reflect those attributes. And that is a very high standard indeed—taking nothing, doing no harm. So by that definition, there's no such thing as a sustainable product yet. We can only hope to be a little less unsustainable in our product development efforts.

Are government mandates or standards necessary to force the hand of the building industry to become more environmentally responsible?

No. But I do think it's necessary for customers—whether they're architects, interior designers, facility managers, or building owners—to demand environmentally responsible products. Even the hardest-hearted, meanest-spirited manufacturers will respond to their customers.

How are other industries practicing sustainability? Is there anything the design and construction industry can learn from them?

The aluminum industry is operating with something like two-thirds of its raw materials coming from recycled sources. I think that's significant, and it reflects the direct economics of good environmentalism. Refining bauxite to make virgin aluminum is extremely energy-intensive, and recapturing that embodied energy by recycling aluminum reduces the new energy input significantly and makes it very economical.

How will the built environment be different in 50 years?

We need to start designing buildings that use photovoltaics or wind energy or fuel cells or biomass, and we need to use that energy efficiently. Advances in building materials will enable designers and architects to fashion buildings in a more site-specific manner, to be responsive to local environmental conditions. We're seeing the beginning of a strong trend toward more nearly sustainable products. And I think that will eventually extend to all the materials in a building—to the point where we finally have a built environment that makes no net new environmental footprint. I can't overemphasize the power of the marketplace to move business and industry in the direction it ought to go. Economics doesn't show much of a social conscience, but specifiers and users and consumers can. And ethics can enter into the decisions they make, and those decisions will change the world. And the world desperately needs changing. ■

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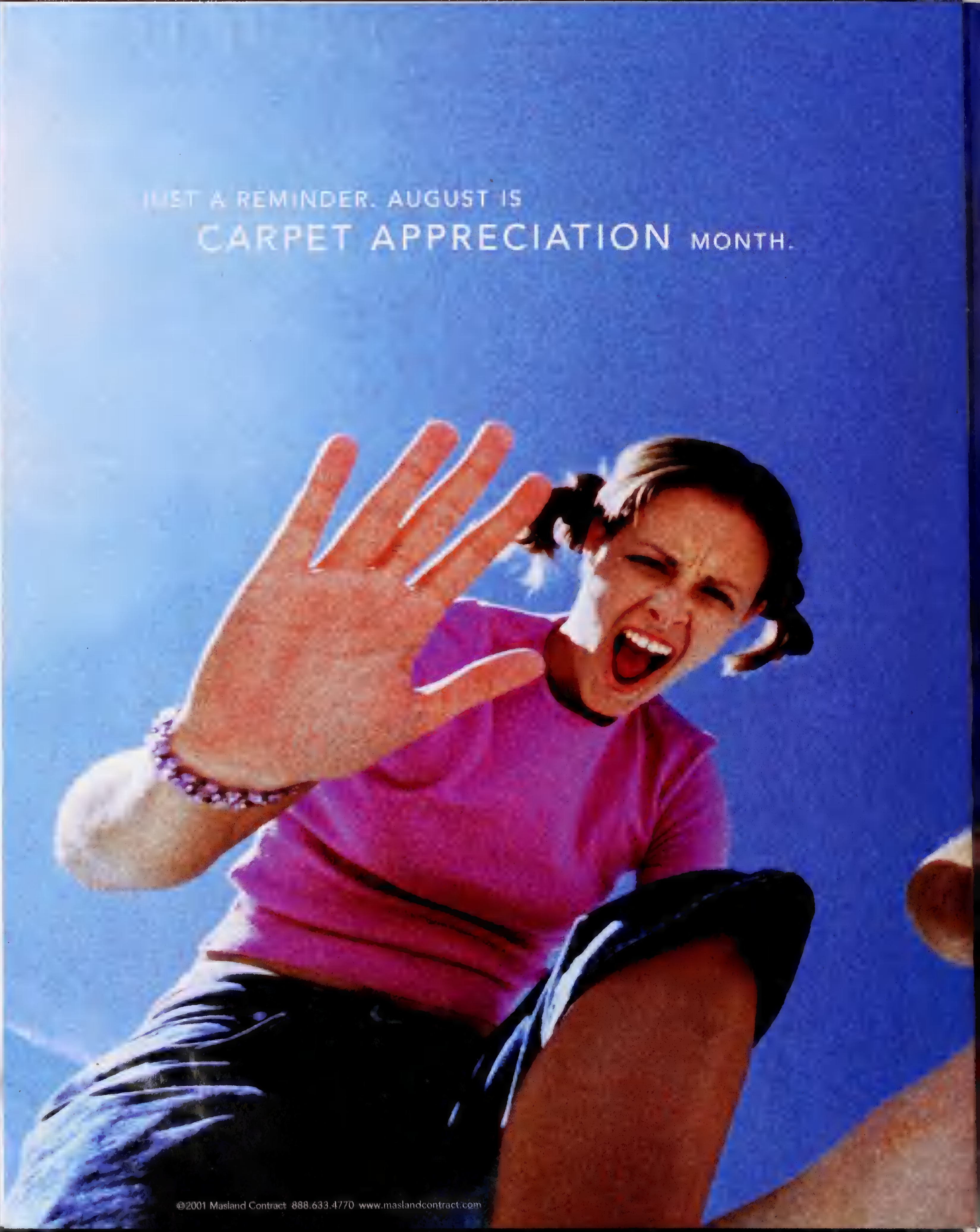

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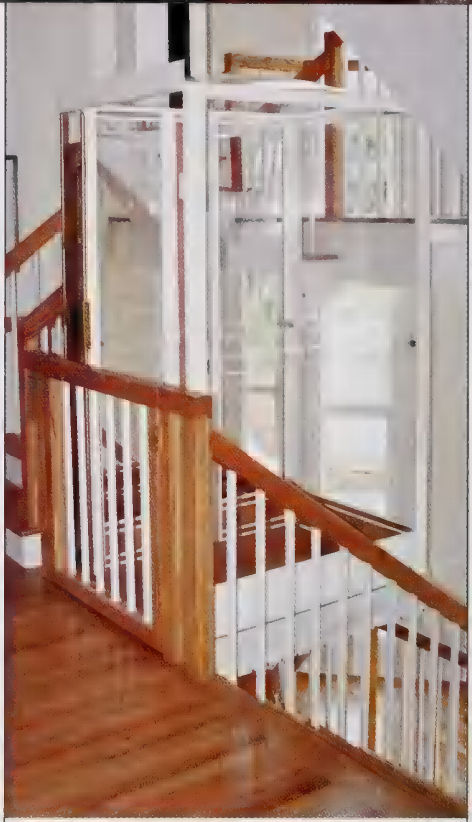

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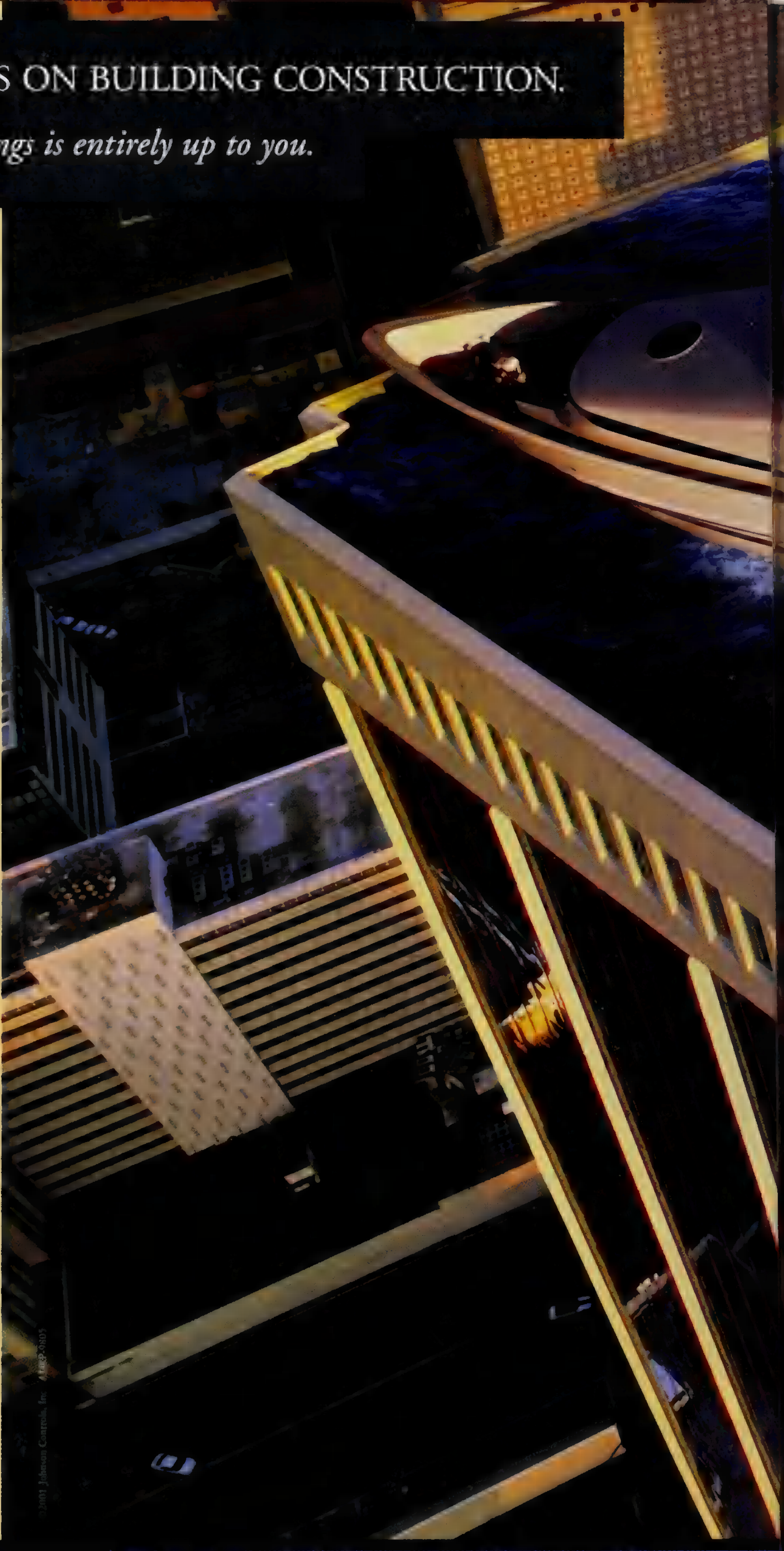

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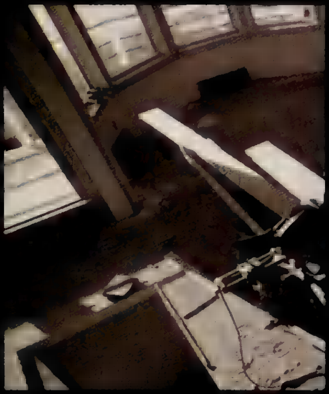

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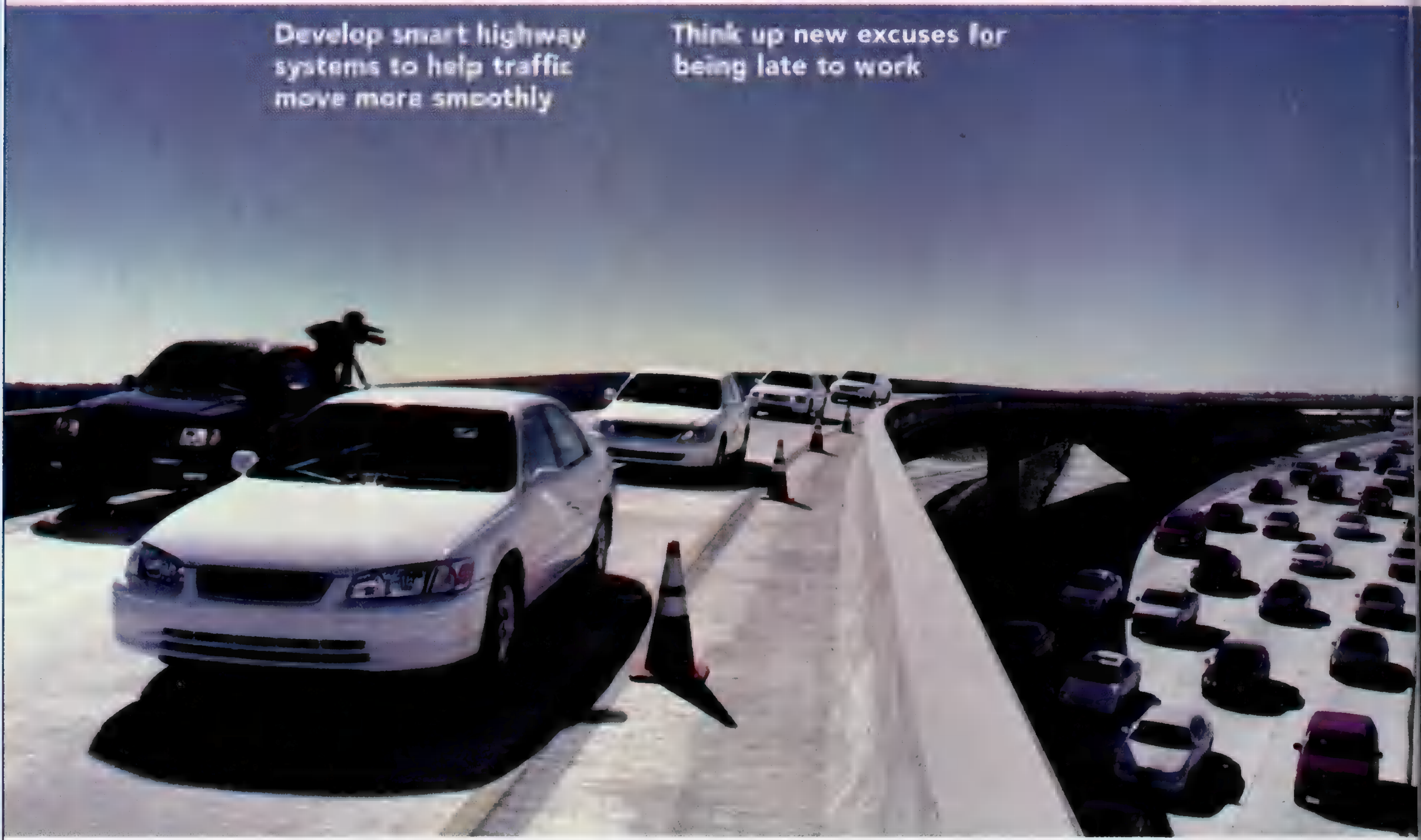
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On the Cover: *Nordic Watercolor Museum, Sweden, photo by Christer Hallgren, and Rose House, Australia, photo by Ross Honeysett.*
Right: *Vuotalo Cultural Center, Finland (top), photo by Jussi Tianen. Bay of Fires Lodge, Australia (bottom), photo by Simon Kenny.* ►

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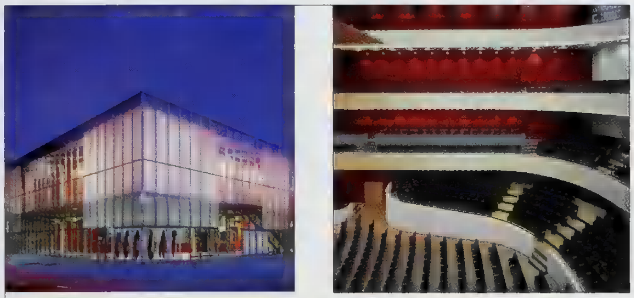

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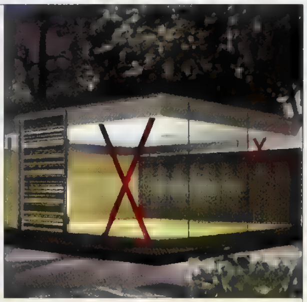

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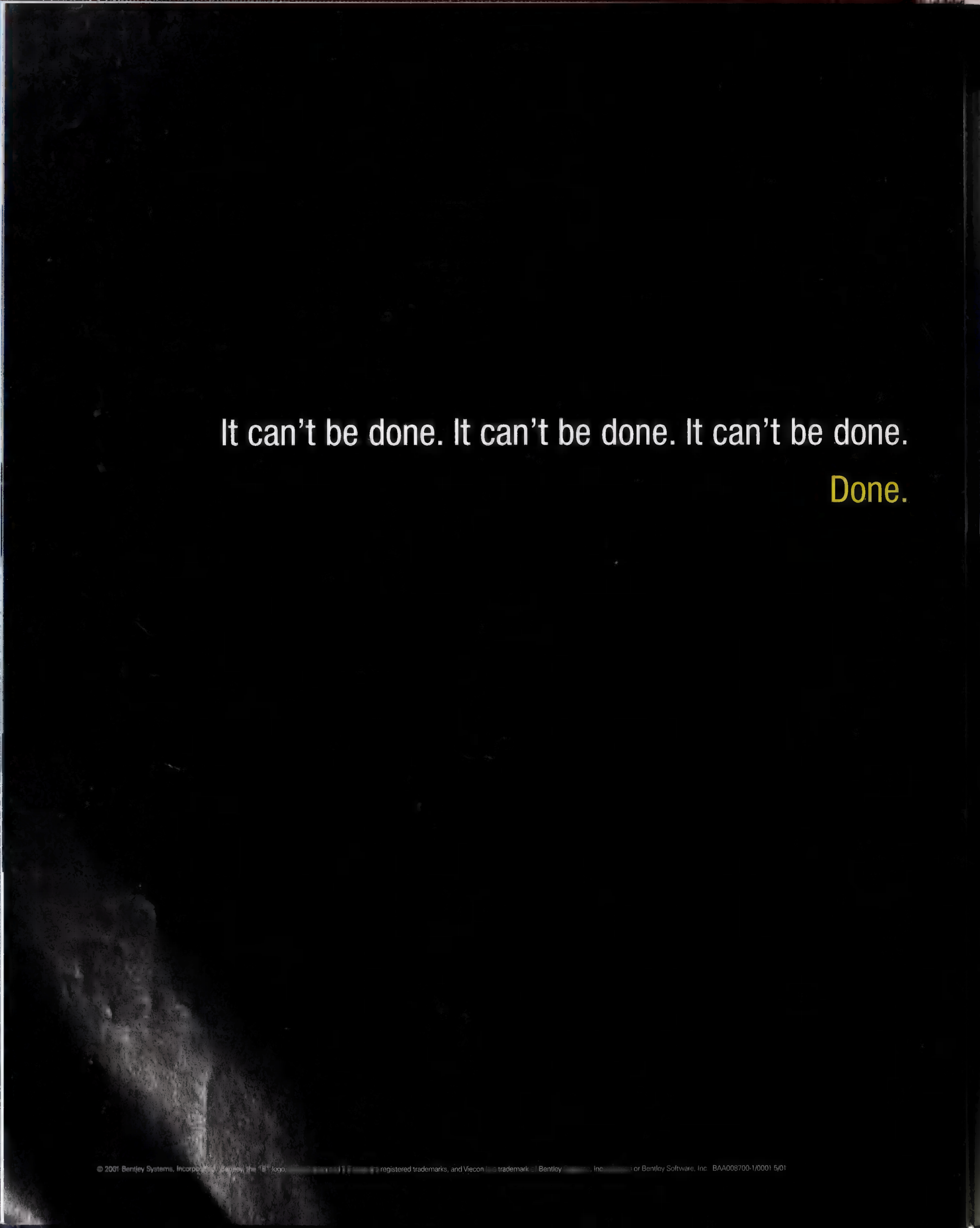

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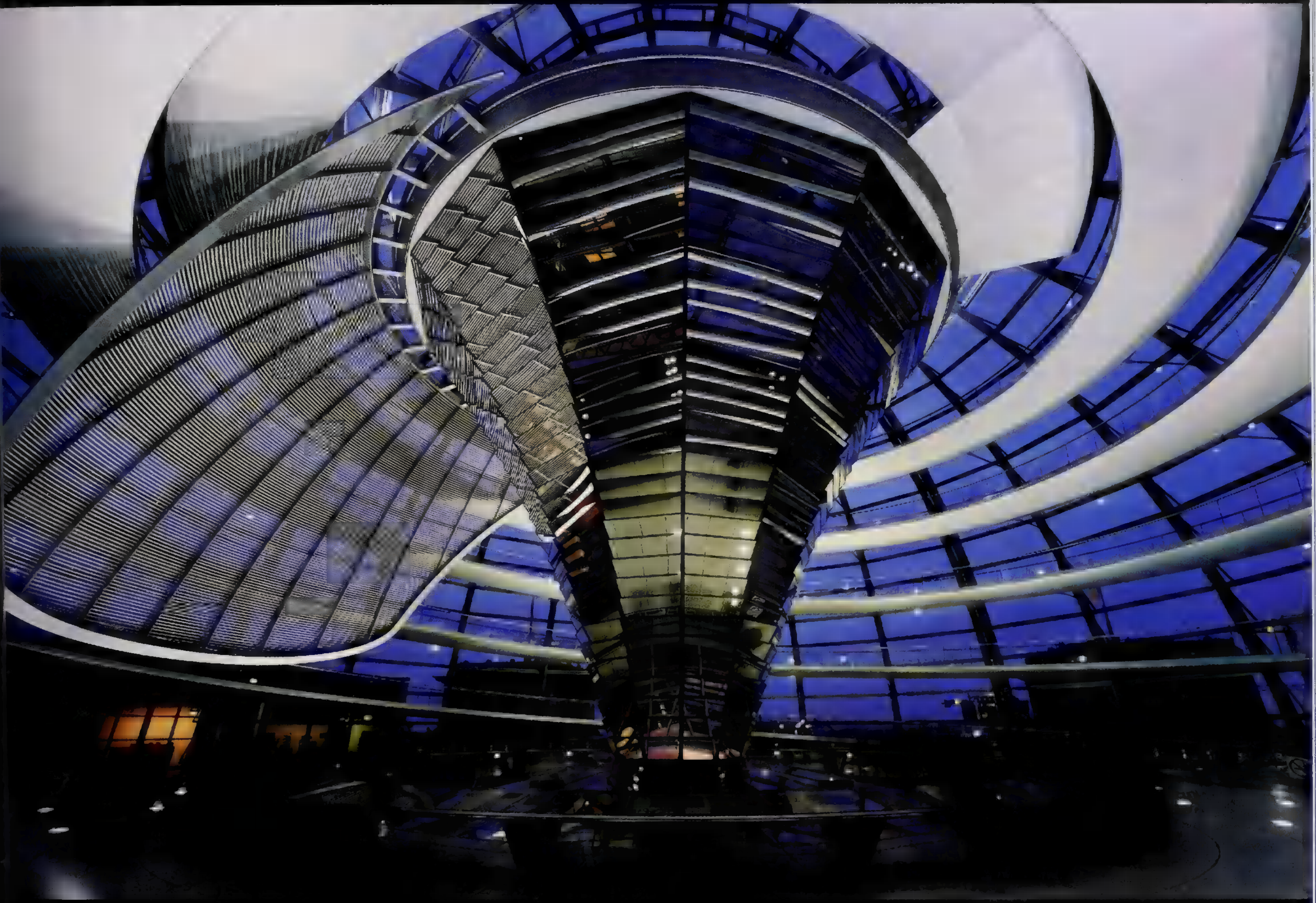

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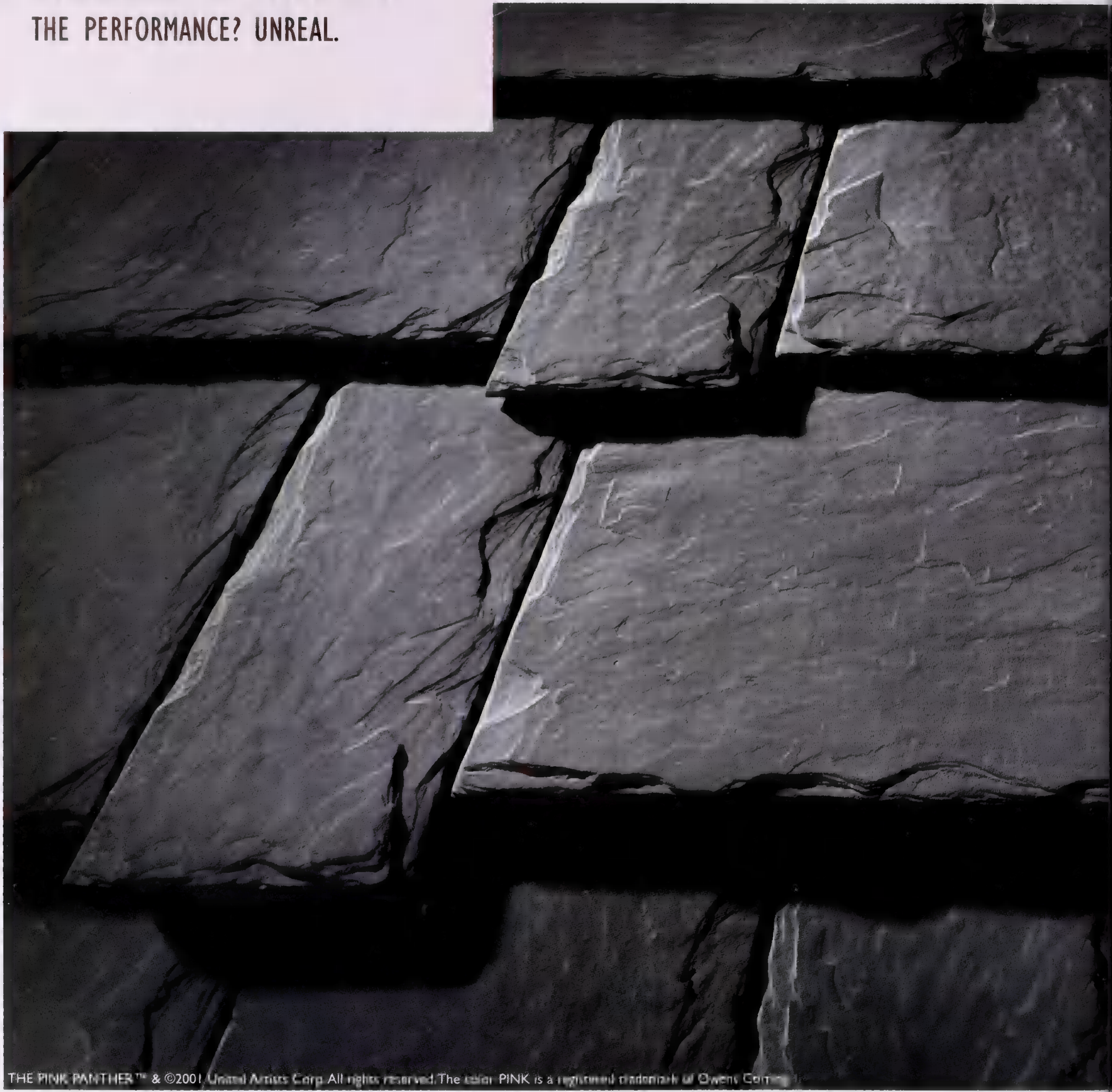

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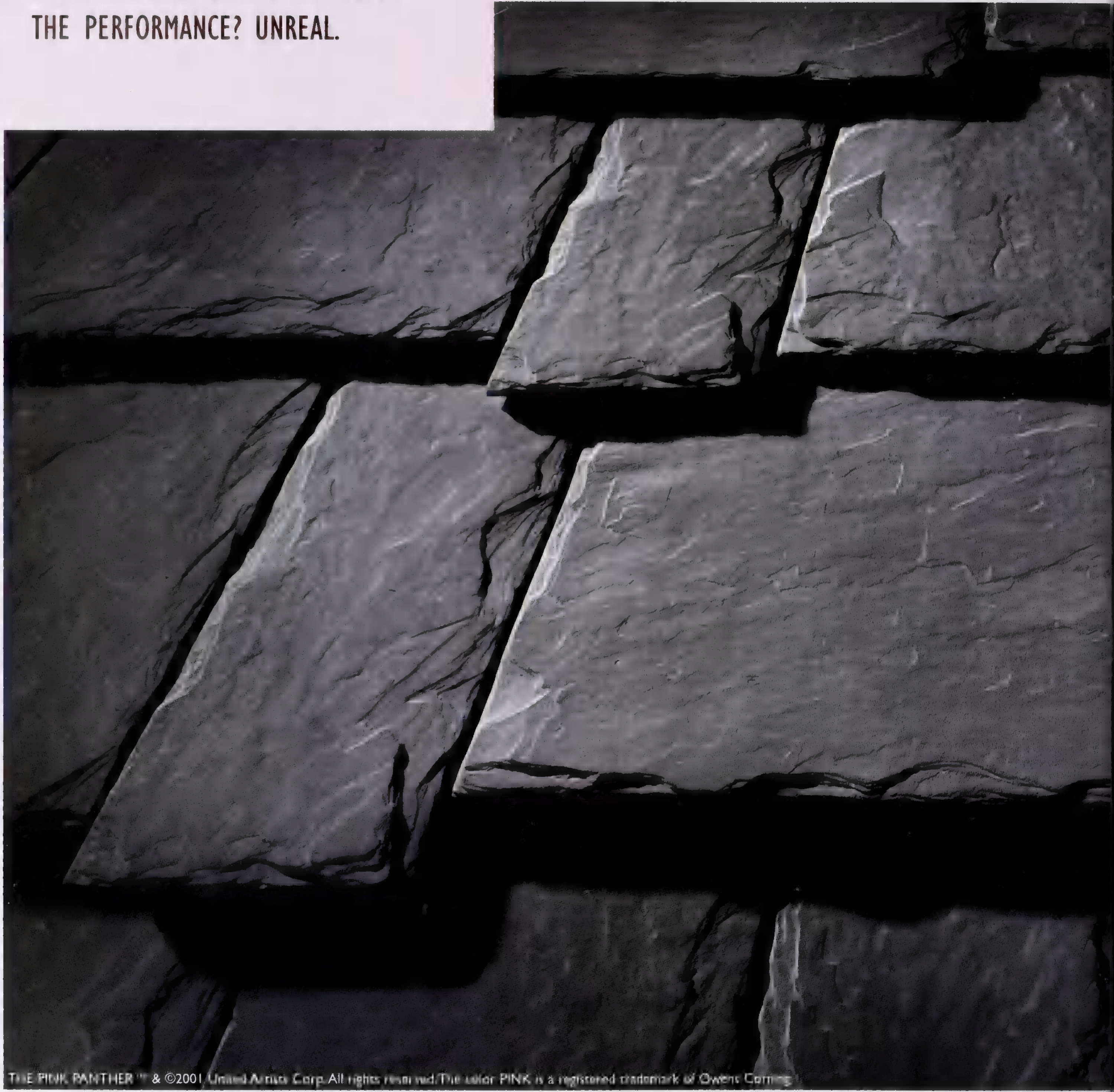

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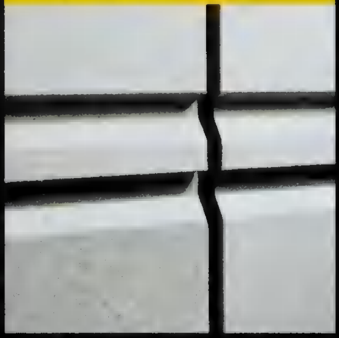

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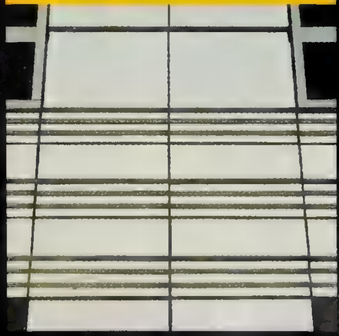

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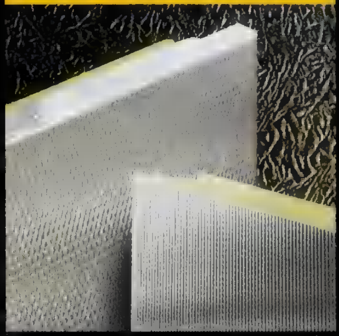

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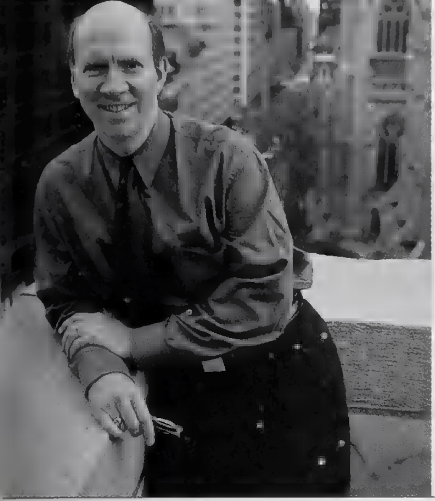

A critical moment

Editorial

By Robert Ivy, FAIA

For the first time in decades, architecture, a 12-letter word formerly consigned to cult status, is drawing big crowds and blazing-hot attention in the public arena. On a recent Sunday afternoon, people poured into the Guggenheim Museum, spiraling down the ramp and smiling all the way, the kids poking their fingers into the models when the guards weren't looking and nodding reverently at the screens—the words "Gehry, Gehry, Frank Gehry," whispered like a prayer to a rock star. Across town, it was Mies, the chaste Modern master, dominating MOMA and the Whitney in an unprecedented bilateral Sturm of cultural Drang. All told, a smashing triple-header for architecture, and grist for weeks of critical speculation. But these curatorial efforts will be less meaningful without critical examination in the consumer press—particularly the newspapers. For as accessible as Gehry may be to the public, a pungent critic can help set his work in a framework of late-20th-century culture, examine its suitedness to cities and the places it inhabits, analyze its components, seek out analogies in literature or history or science or poetry, compare and contrast the work to what we see around us. A good critic can deepen our love and sharpen our wits, while ferreting out the imperfections and raising questions that we, and he, might answer.

We may not get all the answers we would like, since the state of architectural criticism teeters painfully between extremes. The problem concerns its emphasis and placement. A recent survey by Columbia University's National Arts Journalism program unearthed surprising facts about the status of that maligned craft: Only 15 individuals enjoy full-time status at the 45 daily newspapers that claim to have an architecture critic. Others are part-time or cover the real-estate or lifestyle beat.

According to the critics, however, all have to fight for space with editors more prone to give ink and inches to Survivor *than to Mies. Even though Herbert Muschamp's column decrying the World War II Memorial gained front-page status in the* New York Times, *more often the architecture story is buried deep in the Arts section. Think what's missing in your own hometowns: Houston has no regular critic, nor does* USA Today, *with its blanket coverage. Chicago, formerly the only major city to boast two architectural critics, just lost Lee Bey, a respected writer for the* Sun-Times. *New York, a city with four dailies, has one critic. For a topic so central to our lives, the critical writing seems too scarce, the ideas scattered too thinly.*

When it succeeds, criticism informs debate and educates, clarifies the issues and states a position, allowing us to make informed decisions, to be wiser consumers and more ardent and rational proponents for worthwhile efforts. Our cities need informed clients. What will become the character of the land above the Boston artery? Should New York build the downtown Guggenheim as proposed, and how will it change downtown? What effect will budget and material challenges have on Rem Koolhaas' Seattle library? Can development in San Diego's low-scale neighborhoods escape the inexorable financial pressures that push for greater bulk? An informed public can send ripples through our civilization, since architecture has such an immediate effect on public life. While a tiny percentage of people forms architecture's clientele, a larger number controls zoning laws, affects development pressure and real-estate value, and more still, building systems and construction methods. All respond to human desire, and what we want is a function of what we know.

It may seem wishful thinking, but this young country could benefit from the cultural milieu in which every person's taxi driver or university president could articulate a position about architecture. Too much of our wealth and power has been wasted on mediocrity in the public realm, with a continual stream of banal buildings and a waste of the land itself. We need guides, instructors, editors, and writers to take us by the hand and lead us forward past the Inferno to Paradiso. The destination is a more courageous, articulate, and informed public, and the guide, better criticism.

Robert Ivy

CIRCLE 12 ON INQUIRY CARD

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Letters

Of babies and bathwater

I read with interest the news about Eisenman's Wexner Center [News, JUNE 2001, page 38] needing a $10 million renovation/retrofit after only 10 years. I was appalled that a building termed a "landmark building" should be in such a state, not only of disrepair, but also evidently of markedly poor design and engineering.

My immediate reaction was that the building should be demolished—it has ceased to function properly. It leaks, there is a condensation problem, the radiant heating system is nonconforming, the HVAC system doesn't work, and the design significantly contributed to the problems.

Then I read Mr. Robert Campbell's Critique [JUNE 2001, page 75]. I couldn't agree more with his views and assessment. I would like to nominate buildings that are not functioning after a 10-year life span for inclusion with those buildings deserving of our critical attention. This sort of "architecture" gives architects and architecture a bad name. It is astounding that clients are willing to pay millions of dollars for something that will last only 10 years, whether by design or because of poor design.

Architecture is a special blend of art and engineering. When we allow architecture to deteriorate to the point that function is secondary or matters not at all, we deserve the scorn of the public and the decline and downfall of the profession of architecture.

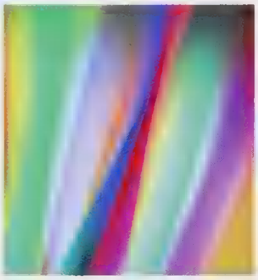
—Lynn A. Javoroski, Assoc. AIA
CSI Milwaukee Chapter President
Department of Public Works
Architecture, Engineering and Environmental Services Division
Milwaukee

Immoral memorial

America deserves an honest, beautiful World War II Memorial [News, JUNE 2001, page 30]. The Friedrich St. Florian design is, as many people have already noted, aesthetically banal and potentially ruinous to the Mall in Washington, D.C. As an architect and the son of a U.S. Army World War II Air Corps lieutenant, I feel passionately that the current design is an insult to what he and every American soldier fought for. Its aloof marble columns—symmetrically placed around a sunken pool at the end of the Mall—give no visual sense of the ugliness of fascism, the intensity of the conflict, and the true pride felt by every soldier who fought for democracy. In the words of the artist Chaim Koppelman, a veteran of the D-Day Normandy invasion, the design is "a travesty, more like a monument to the Nazi Wehrmacht" than to American freedom fighters. The memorial should educate people about the cause of the war and should strengthen the most beautiful and powerful thing about American democracy: the notion that differences among peoples—be they of race, skin color, or language—only add to the greatness of humanity.

—Dale Laurin, AIA
New York City

President Bush has demonstrated incredible insensitivity in sweeping away all resistance to the proposed



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CIRCLE 13 ON INQUIRY CARD

WWII memorial's location and design. Ironically, the Mall on Capitol Hill is the symbolic place of expression for democratic resistance to injustice. Now its literal and symbolic openness will be obstructed by a forgettable representation of a noble national effort. The Vietnam vets are better remembered. Is there some way to continue the fight?
—Dennis McLaughlin, AIA
via e-mail

Trumping Berlin

Berlin city officials are turning their backs on the past and giving Donald Trump the green light to do the otherwise unthinkable. They are allowing the historically rich area of the Alexanderplatz to be overshadowed by just another "Trump Tower." This tower will surpass the height limits of the master plan for the Alexanderplatz by almost three times and will surpass almost everything else in the city as well. Ironically, this is actually an attempt to retain the city's plan for the reform of the Alexanderplatz which cannot be implemented due to a lack of developers. And, of course, Trump has a great ability to attract tenants. Instead, Berlin should seek architecture that addresses site issues and does not compromise the architectural integrity and the cultural context of the Alexanderplatz.
—Deborah Sciacca
Rhode Island

Marketing kudos

I enjoyed reading your series on marketing these past few months [Marketing, part I, FEBRUARY 2001, page 66; part II, MARCH 2001, page 66; and part III, MAY 2001, page 180]. As a marketing communications professional who has been working in the design industry for more than 19 years, I have often been frustrated by architects' lack of understanding of this important part of their business. I'm sending the articles to my architect clients and keeping them in my files for future reference. Perhaps marketing could be added to the AIA Continuing Education series in the magazine?!
—Sara Marberry
via e-mail

Market fever

Bravo! Your comprehensive coverage of marketing professional design services is a "must read" for everyone who works in, or aspires to work in, the AEC industry. It is probably the most thorough series of articles I've ever seen in an independent, national publication geared to a technical audience.

Client consciousness and expectations have been raised over the years, spurring increasingly sophisticated brochures, direct mail, Web sites, and other vehicles to give firms a competitive advantage. Therefore, I think that it would be very interesting if ARCHITECTURAL RECORD did a follow-up article on how marketing collateral materials has evolved from the Dark Ages to the Technology Age, as a result of the industry changes you cited in your article series.
—Dorothy J. Verdon
Chair, SMPS Public Relations
Task Force
Alexandria, Va.

Corrections

In our story on the Whitaker Center [MAY 2001 page 330], by HHPA, the interior designer, Caroline Bertrand, and the construction administrator, Jim Simmons, were not listed. Also in May [AIA awards, page 141], our coverage of the New York Stock Exchange trading floor expansion incorrectly listed Parsons Main as architect of record. The architect and the architect of record on that project was SOM. In our coverage of the concert hall in Rouen, France, by Bernard Tschumi Architects [JUNE 2001, page 104], the following people were not listed as part of the team: Peter Cornell, Cristine Devizzi, Robert Holton, Megan Miller, Laurane Ponsonnet, Kim Starr, Roderick Villafranca; and Hugh Dutton Associates as facade consultant.
send letters to rivy@mcgraw-hill.com

Three Custom Solutions That Work!

By Barbara A. Nadel, FAIA

FROM HISTORIC COURTHOUSE RENOVATIONS TO RESIDENTIAL PROJECTS, MARVIN WINDOWS AND DOORS PROVIDES ARCHITECTS WITH DESIGN FLEXIBILITY, RELIABLE SERVICE AND CUSTOMIZED CAPABILITIES.

For over 80 years, the Warroad, Minnesota-based manufacturer has produced made-to-order windows and doors for residential and commercial construction, renovation, and historic restoration projects. Marvin offers over 11,000 standard styles, shapes and sizes, along with nearly unlimited custom possibilities to meet project requirements.

Marvin's new Wood Ultimate Double Hung window provides flexibility for historic renovations and other special installations. This product can be configured numerous ways, including traditional double hung, single hung or an operating round top window. Custom details, such as divided lites or special hardware colors to coordinate with building décor, are available. For more traditional applications, the optional simulated thick sills and ogee lugs capture the charm of old windows.

Custom capabilities don't necessarily mean additional premium costs or lead times of 12 weeks or longer. Marvin offers many standard options, such as unusual divided lite patterns or special exterior casing, considered custom work by other manufacturers. For example, Marvin's *Made for you* manufacturing process provides one-of-a-kind windows and doors to meet specific project needs, such as custom clad color, special glazing options, or other unique design requirements.

Standard Sizes for Historic Homes

"Marvin's standard window selections are also excellent," says Eileen Koenigsberg, AIA, principal of Moore Koenigsberg Architecture, in Denver, Colorado. When Koenigsberg designed a two story, 600 square foot addition to her home in a Denver historic district, she specified standard Marvin Windows and Doors because of the variety and increments available. "The standard sizes perfectly matched the existing windows on the house. We used double hung cottage style windows on the first and second floors to maintain the historic look, along with regular double hung windows in the sun porch to let in more light," she says.

"Turtle Glass:" Environmental and Energy Solutions

Glazing options are available to suit project and climate requirements. In the southeastern United States, particularly Florida, tinted glass (or "turtle glass") for coastal areas is popular for environmental reasons. According to Mike Hoffart, Marvin Architectural Division Manager, some southeast Florida building codes have a "Turtle Code", calling for tinted glass on coastal homes facing the water.

Sea turtles come to the shore to lay eggs, and follow the moonlight reflecting off the water to go back to sea. When homes built along the coastline reflect too much light on the beach, turtles get confused and go inland, explains Hoffart. Turtle glass maintains shading coefficients designed to minimize reflected light on the beach and guide the turtles back to sea.

For better energy performance and heating and cooling cost savings, Marvin offers insulating glass with Low E II coatings, to lessen conductivity of heat and cold from the outside. Glazing with Low E II coatings reflect the high angle summer light and absorb the low angle winter light for temperature control.

Small Town Courthouse Maintains Operations

In recent years, Marvin has provided windows for many non-residential applications, including universities, courthouses an healthcare facilities. In upstate New York, an area subject to cold temperatures and high winds, Marvin worked closely with architects and owners to meet the functional, environmental, acoustical and scheduling needs of a small town courthouse built at the turn of the century along a busy highway.

"During the renovation and new addition to the historic H. Douglas Barclay Courthouse for Oswego County in Pulaski, New York, Marvin was very willing to work within our constraints," says Sheila Weed, AIA, principal of Group 1 Design in Syracuse, New York, and former project architect with JCM Architectural Associates, of Syracuse for the courthouse.

"A small town cannot afford to close down a busy courthouse for even a few hours. The contractor replaced two or three windows at a time, and worked around the client's schedule, with no loss of downtime to the owner. As soon as the windows were installed, the work was done," Weed says.

Marvin customized over a dozen different window sizes and configurations for the project, including simulated divided lites to replicate the original windows in both the renovation of the existing building and the new addition. The double-paned, Low E II glass windows used in courtrooms, judges' chambers, and throughout the building effectively address cold climate concerns and block out ambient noise from adjacent highway traffic.

Marvin Windows and Doors Custom Solutions

"Everything is in the details," says Hoffart. "Our project management personnel work with distributors and dealers for support on custom projects, proposals and drawings. We stay involved with ordering, production, delivery and field service through project close out. Our design support tools include the Marvin Design System, a CAD software package created with the design team in mind. The Marvin Design System runs either as a stand-alone format or with AutoCAD."

The Architectural Services Division in Warroad, about six miles from the Canadian border in northern Minnesota, is across the road from the company's manufacturing plant, where skilled workers turn truckloads of pine into custom-made window and door components.

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Barbara A. Nadel, FAIA is principal of Barbara Nadel Architect, in New York City, specializing in programming, planning and design of institutional facilities. She is 2001 National Vice President of the American Institute of Architects and frequently writes about design and technology.

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CIRCLE 15 ON INQUIRY CARD

Record News

Highlights Aussies battle for height p. 30
Cutting-edge meeting at Archilab p. 33
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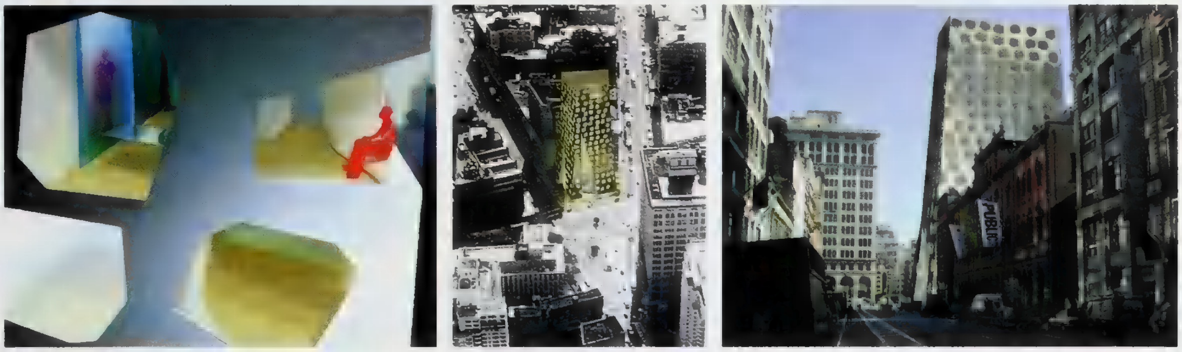
Center for wine goes up in Napa p. 38

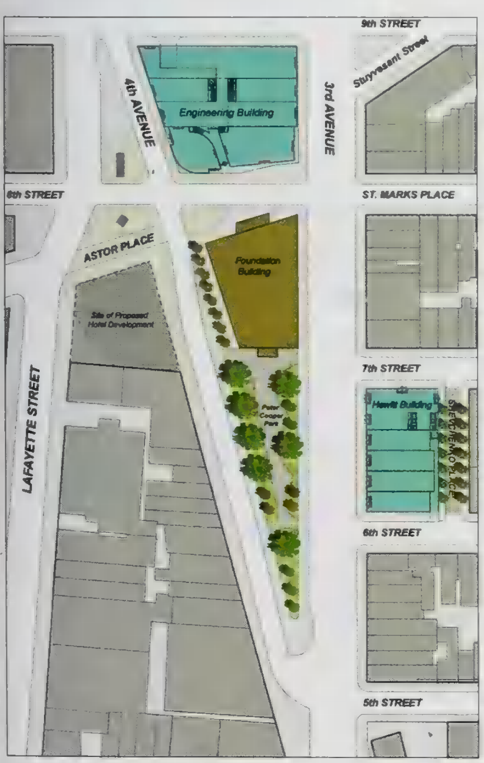
Plans nixed for NYC hotel by Koolhaas and Herzog & de Meuron



The hotel (center and right) by Koolhaas and Herzog & de Meuron would have had distinct windows (left) for each room.

Although plans for new development and the reconfiguration of streets surrounding Cooper Union in New York City will move forward, the hotel designed by OMA/Rem Koolhaas and Herzog & de Meuron for Ian Schrager Hotels will not be built.

Schrager is the New York–based hotel owner who created Studio 54 and the Palladium in New York in the 1970s and who owns hotels in New York, Los Angeles, Miami, and London, including the Paramount and Hudson in New York. Schrager hired OMA/Rem Koolhaas and Herzog & de Meuron to design a $120 million, 20-story hotel at the intersection of Astor Place, Lafayette Street, 8th Street, and Fourth Avenue in New York. This was the first collaboration between Koolhaas and Herzog & de Meuron. In a press conference held on May 11 Schrager, together with Koolhaas and Jacques Herzog, unveiled the design, but the collaboration ended within weeks of the press event.



The master plan for the Cooper Union area.

A joint statement released by Ian Schrager Hotels and the team of architects states, "Ian Schrager Hotels has ended its collaboration with the architecture firms of OMA/Rem Koolhaas and Herzog & de Meuron on the Astor Place Hotel project in New York, citing differences in the direction of the project. Acknowledging that the project has been rewarding, chairman and CEO Ian Schrager expressed the highest admiration and respect for both architects and their work." Neither Schrager nor the architects would comment further.

A spokesperson for Schrager's office said the hotel developer still plans to build a hotel on the site, but it's too soon to say how or when a new architect will be selected. This would be Schrager's first newly constructed hotel: All of his current hotels are renovations of existing buildings.

The hotel by Koolhaas and Herzog & de Meuron would have had 260 guest rooms with varied, angular window openings, and 60 tiny, capsulelike rooms, each with only enough space for a bed. An outdoor urban plaza linking Lafayette Street and Fourth Avenue was planned. At the press conference, Schrager said, "This building may revolutionize the hotel business."

The hotel would have been built on a site across from Cooper Union. The New York firm Pasanella+Klein Stolzman+Berg has developed a master plan for the Cooper Union blocks immediately surrounding the school's Foundation Building. The plan calls for a reconfiguration and narrowing of streets immediately north of the hotel site and to the south of the Foundation Building—creating a larger, more prominent Peter Cooper Park. Sites for a new engineering building, up to 17 stories tall, and for a nine-story building east of the Foundation Building, are part of the plan.

John E. Czarnecki, Assoc. AIA

CALATRAVA DESIGNS OLYMPIC STADIUM CANOPY FOR ATHENS

Santiago Calatrava has his eyes set on the 2004 Olympic Games in Athens, Greece. Calatrava unveiled a proposal in June to literally shield Athens' Olympic Stadium and the surrounding complex from Greece's severe summer weather. His design would cover the existing stadium with translucent glass panels on steel arcs. The panels would be arranged to span the 80,000-seat Olympic stadium, as well as the nearby cycling stadium. Walkways connecting the complex would be lined with trees and water pools—intended to produce what Calatrava calls "a micro climate" to keep visitors cool. The Greek government is likely, although not certain, to welcome Calatrava's offer of design services. Athens' Olympic stadium is expected to close early next year for renovation to begin.

Christina Rogers

OFF THE RECORD

Steven Holl, AIA, has won the 2001 Médaille d'Or (gold medal) from the French Academy of Architecture. Holl is the first American to win the French gold since I.M. Pei in 1981. French architect Jean Nouvel, who has never had a project built in Britain, received the 2001 Royal Gold Medal for Architecture by the Royal Institute of British Architects. The Royal Architectural Institute of Canada (RAIC) awarded Toronto architect A.J. (Jack) Diamond the 2001 RAIC Gold Medal.

The Milwaukee Art Museum [JUNE 2001, page 37] has decided to construct its brise-soleil out of steel, rather than carbon fiber. The brise-soleil and the rest of the addition by Santiago Calatrava will be completed in time for a gala opening on October 13 and 14.

Ralph Lerner, FAIA, stepped down as dean of Princeton University School of Architecture, effective July 1. Mario Gandelsonas will be acting dean while a search for a successor takes place.

Martha Ellen LaGess has been named dean at the University of Texas at Arlington's School of Architecture. She was Unit Master at the AA in London. The search for new deans continues at Texas Tech and UT-Austin.

The shortlist in a competition to design a new home for the Sculpture Center in Long Island City, Queens, N.Y., includes Deborah Berke, Diller + Scofidio, Maya Lin, and Weisz + Yoes.

British firm Alan Short and Associates, with Burnidge Cassell and Associates, of Elgin, Ill., has been selected to design a home for the departments of art, design, and architecture at Judson College in Elgin.

Actor Anthony Quinn, who died on June 3 at age 86, studied under Frank Lloyd Wright at Taliesin. Wright advised Quinn to take acting lessons to improve his communication skills.

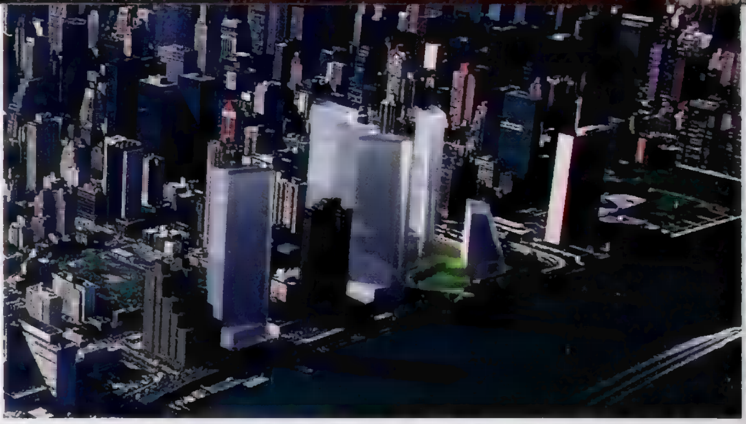
Pei Cobb Freed and SOM to plan NYC East River site

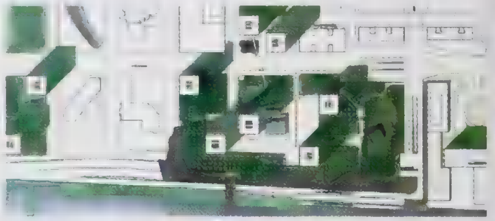
Pei Cobb Freed & Partners and Skidmore Owings & Merrill (SOM) of New York have been selected through an ideas competition [APRIL 2001, page 32] to complete the master plan for a 5-million square-foot mixed-use development on the site of a former Consolidated Edison (Con Ed) steam plant on the East River in Manhattan, just south of the United Nations headquarters.

The site extends from 35th to 41st Streets, between First Avenue and FDR Drive. FSM East River Associates, a partnership between Fisher Brothers and Sheldon H. Solow, is developing the nine-acre site. The partnership recently contracted to acquire the land from Con Ed for up to $680 million, based on many contingencies. The architect-selection process was led by Bill Lacy, FAIA, president of Purchase College of the State University of New York and executive director of the Pritzker Architecture Prize.

The development site on the East River.

The initial ideas competition included firms that were asked by the developers to work together: David Childs of Skidmore Owings & Merrill, Richard Meier, Peter Eisenman, and Hugh Hardy; HOK and Schuman Lichtenstein Claman Efron; Kohn Pedersen Fox, Rem Koolhaas, Davis Brody Bond, and Toyo Ito; Henry Cobb and James Ingo Freed of Pei Cobb Freed & Partners and Machado & Silvetti Associates; and Christian de Portzamparc and Gary Edward Handel & Associates.





Initial schemes for the Con Ed site were developed by Pei Cobb Freed & Partners (above) and SOM (right) as part of teams that included other firms.

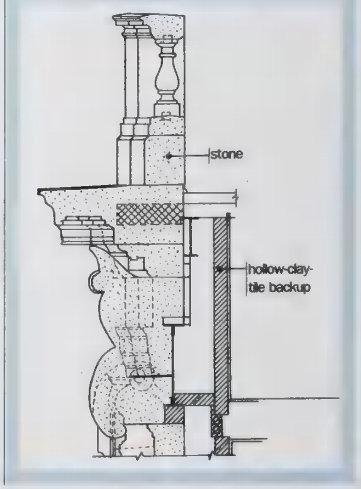
Pei Cobb Freed & Partners and SOM were on competing teams in the initial competition. Unhappy with the selection process, other competing architects declined offers for consulting positions on the master-plan team. In a statement, Meier and Eisenman said, "Unfortunately, the euphoria of the design process has been quenched by unfortunate circumstances that blur, if not blind, the vision of what should happen in this great city."

In response to Meier and Eisenman, Lacy said in a statement, "The level of all of the design proposals was truly exceptional. The developers were faced with the nearly impossible task of selecting a master-planning team from among a group of supremely creative and talented individuals. It was unfortunate that they could not choose everyone."

The master-plan team is led by Henry Cobb, FAIA, of Pei Cobb Freed, and Marilyn Jordan Taylor, FAIA, of SOM. Consultants on the project include Machado and Silvetti Associates of Boston and landscape architecture firm Olin Partnership of Philadelphia. The new team is expected to take about four months to develop an initial master-plan concept. *JEC*

AR illustrator dies

Muriel Cuttrell, a graduate of Pratt Institute who first drew and later coordinated this magazine's architectural drawings, died of a stroke on May 28. She worked as a draftsperson in an architectural firm before becoming our freelance illustrator and consultant, a post she held at the time of her death. Her 43-year association with RECORD spanned from hand-rendered ink drawings on vellum to computer renderings. Design director Anna Schlesinger characterized her drawing as "a trademark that architects came to treasure as RECORD's own."



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CIRCLE 16 ON INQUIRY CARD

OFF THE RECORD

For its renovation, Lincoln Center is considering a glass covering by Frank O. Gehry, FAIA, to extend over its open plaza. The design includes a funnel-like passageway swooping down to the street.

Filmmaker Sydney Pollack is making a documentary about Gehry.

Antoine Predock, FAIA, earned two honorary doctorates this spring: a Doctorate of Fine Arts from the University of New Mexico and a Doctorate of Human Letters from the University of Minnesota.

Marilyn Jordan Taylor, FAIA, has been elected chair of Skidmore, Owings & Merrill, effective October 1. Taylor will be the first woman to head the firm.

The Charter High School for Architecture + Design (CHAD) in Philadelphia held its first commencement in June. Author and illustrator David Macaulay was the speaker.

Antonio Cruz and Antonio Ortiz of Seville, Spain, were selected for the major $180 million renovation project for the Rijksmuseum in Amsterdam [JANUARY 2001, page 36].

The Office of Metropolitan Architecture/Rem Koolhaas won a competition for the design of a new conference center for the city of Córdoba, Spain. Others competing were Cruz and Ortiz, Toyo Ito, Zaha Hadid, and Rafael Moneo.

British architect David Chipperfield was selected in a competition for the new BBC headquarters in Glasgow—Chipperfield's first major commission in the U.K. in 11 years. Competing were Mecanoo, Page and Park, Wilkinson Eyre, [illegible], and Richard Rogers Partnership.

Richard Meier, FAIA, is designing a $40 million open-air pavilion at the site of Woodstock, which he didn't attend.

Australians battle for tallest residences

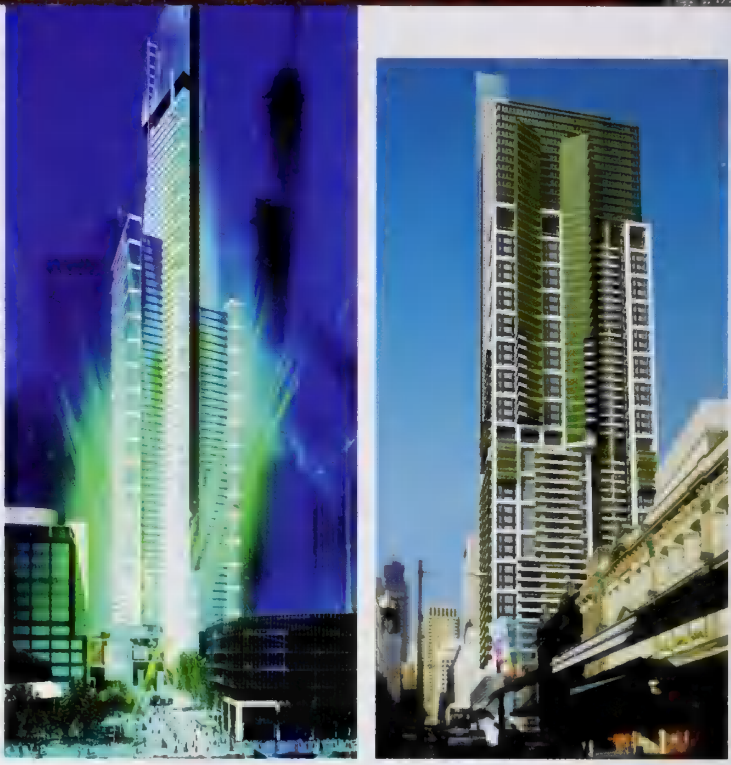
Sydney will be ahead, temporarily, in the contest for Australia's tallest residential tower, but Melbourne will ultimately be on top.

At 760 feet, Sydney's World Tower will be the tallest residential building in the southern hemisphere and, internationally, second only to New York's Trump World Tower. But Sydney's supremacy won't last long, nor will that of the Trump World Tower.

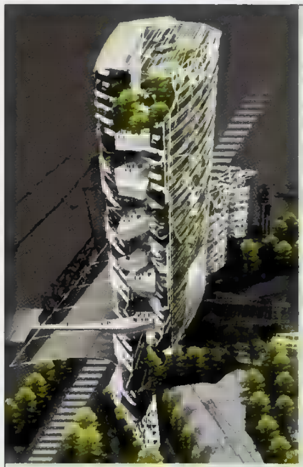
Sydney's $105 million World Tower, under construction and due for completion in early 2003, will be overtaken by Melbourne's $127 million Eureka Tower, which is due for completion in late 2003. At 984 feet tall, Eureka Tower will be the world's tallest residential tower.

Both Eureka Tower and World Tower are designed by the Melbourne-based firm Nation Fender Katsalidis (NFK). World Tower's design was chosen in a limited competition of NFK, Peddle Thorp, and Harry Seidler. NFK says World Tower will be a "tall building with skinny legs and broad shoulders," to maximize views and sales opportunities. It will have a crisp white frame, with colored panels varying from gray to blue near the top, "to connect to the sky." A rigid master plan, dictating sun angles and so on, accompanies the development of World Tower as well, making it a building about "structural expression." By contrast, Eureka would be, according to NFK, "smoother . . . a more direct expression of verticalness." NFK calls Eureka a "vertical city," comprising three separate residential areas on top of one another, each with a separate elevator core.

According to NFK, Eureka is "essentially a glass skin with some balconies. It looks a bit like a big carving knife—a sharp, angular design." *Anne Susskind*



Eureka Tower (left) and World Tower (right) are proposed in Australia.



Towers by Yeang highlight London redevelopment

Elephant and Castle, an unloved and heavily trafficked area southeast of central London, will be overhauled into a new district within the next 10 years. Central to this regeneration in the London borough of Southwark will be two high-rise residential towers designed by Malaysian "green skyscraper" specialist Ken Yeang.

The rebranded Elephant and Castle will become a mixed-use district composed of a multimodal transport interchange, public piazza, retail center, and public park. The master plan and individual buildings for the enormous area have been designed by London practices HTA, KP Architects, Foster & Partners, and Benoy, in association with engineer Battle McCarthy. Foster & Partners has designed a train station for the site. A curvaceous, glazed canopy covering the interchange will form the central point of the development.

Yeang's residential towers, which will flank a 15-acre park, are a continuation of the architect's innovative approach to sustainable high-rise design. The buildings will be oriented to maximize passive solar benefits for occupants and make use of solar reflection to the northern facades of the building below. The towers, whose core uses will be residences and work spaces, will also host "events in the sky," with bars and restaurants, a hotel, and health and sports facilities.

Environmental and social concerns are being addressed in all aspects of the development. In an attempt to allay local residents' fears that the overhaul will lead to the gentrification of the area, community representatives have been consulted at every stage. ***Adam Mornement***

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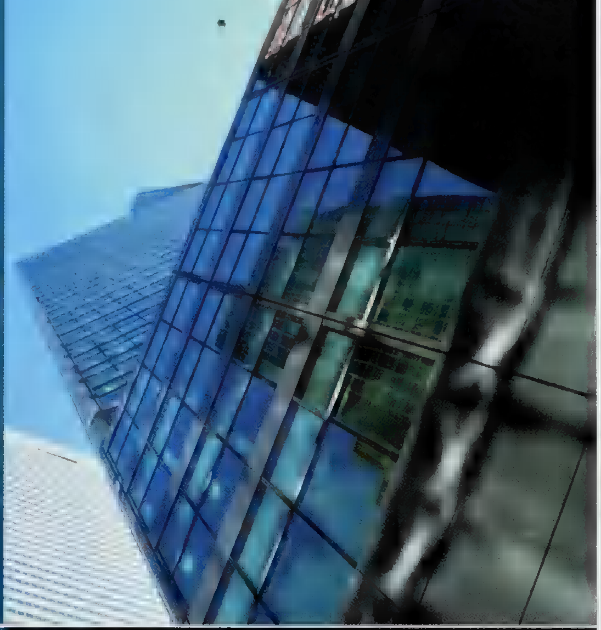

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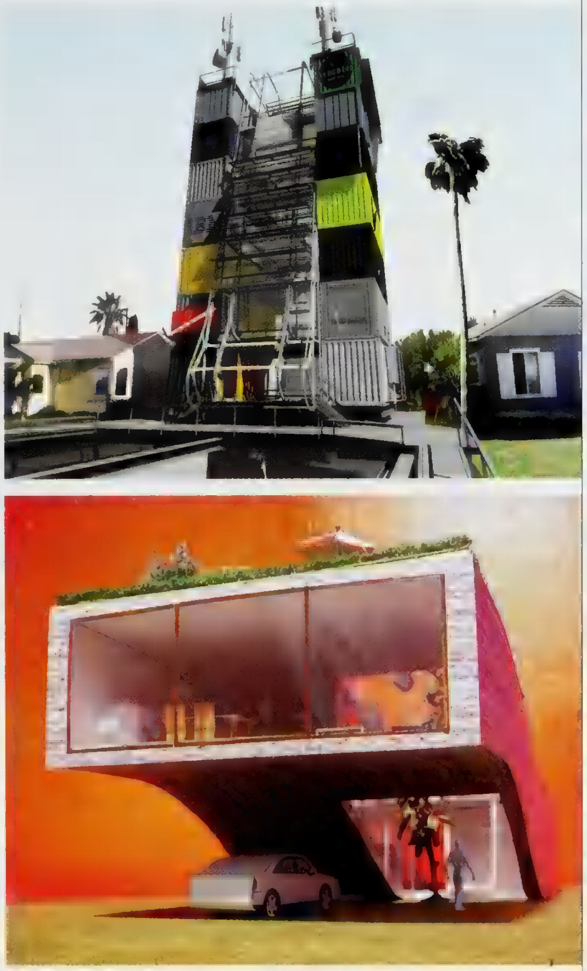
CIRCLE 18 ON INQUIRY CARD

Young, cutting-edge architects gather at Archilab in France

"The Blob is dead!" someone proclaimed last April during the Archilab conference in Orléans, France. That sweeping statement did not come from the podium or stage—where provocation, playful or otherwise, was not exactly the *soupe du jour*—but from the back of the bus, en route to the final meal of the three-day conference. In fact, blobs were amply represented in Archilab 2001's exhibit of work by its 90 participants. But the contrast between conversations in the lecture hall and those around the dining tables was far more striking.

"Housing Today," the official theme of this third annual Archilab meeting, never quite galvanized the group's diffuse onstage discussions. And individually, the 70 presenting teams—mostly architects—were granted five minutes in which to show work. Speakers were whisked by in rapid succession, as if on a conveyer belt, their five-minute allotments strictly enforced by dimming lights and microphones, while the projected slides only occasionally corresponded to the presenter. Nonetheless, Archilab 2001 was an enormously valuable conference.



Wes Jones proposed a residence of shipping containers (top); NL Architects showed landscape on houses (above).

Where else would so many youthful architects (many in their early and mid-30s) from around the world have an opportunity to gather, exhibit work, and share intense days in a pleasant, but undistracting, setting? In Orléans, Tokyo-based Shigeru Ban (making refugee shelters from cardboard tubes) might find himself lunching with, say, Detroit-based Kyong Park (focusing on burnt-out relics of urban blight) and Rotterdam-based Kas Oosterhuis (proposing "elastic" houses). The very act of throwing together an array of thinkers for a concentrated stretch of time may be the essence of a good conference—perhaps little more is ever really needed.

Archilab, the brainchild of Frédéric Migayrou, now curator of architecture at Paris' Pompidou Center, and Marie-Ange Brayer of the Regional Contemporary Art Fund (FRAC), was conceived as a laboratory for research-oriented architects, a great beaker for ideas. Backed by FRAC and the city of Orléans, this forum embraces an unusually inclusive approach, each year inviting back all past participants, plus 30 new ones, swelling the ranks from 30 participating teams in 1999 to 60 in 2000 and 90 in 2001.

The 2001 theme, "Housing Today," seemed like many catchalls—a construct awkwardly imposed on the invitees. For starters, why should we assume that all past Archilab participants, however interesting their work, have necessarily focused on housing? The heading, though undeniably important, was simultaneously too broad and too narrow; and the exhibit's categories—individualizing collective housing, flexibility, creating landscape, new lifestyles, subversion, and form—often seemed arbitrary. That said, the richness of Archilab emerged in a plurality of voices and visions. Curated by Brayer with Béatrice Simenot, Archilab 2001 ran the gamut, alphabetically, from Spain's Abalos & Herreros to the Netherland's Zanderrothe Architekten.

Visit www.archrecord.com for more on the Archilab conference. *Sarah Amelar*

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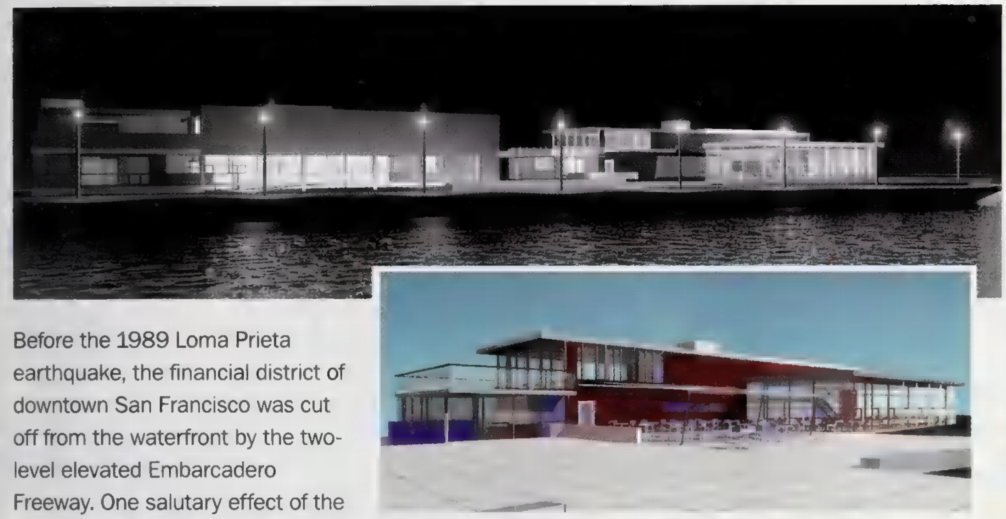
Modern restaurants to anchor San Francisco waterfront park

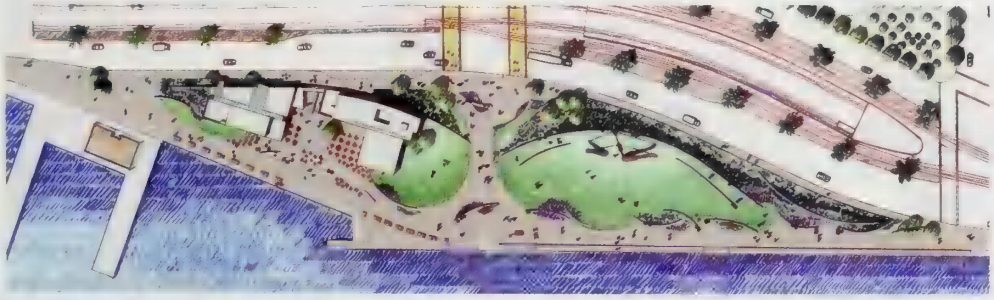


Restaurants by (top, left to right) Jim Jennings and Pfau Architecture will complement each other. The Pfau building (above) includes a Modernist composition of wood and glass.

Before the 1989 Loma Prieta earthquake, the financial district of downtown San Francisco was cut off from the waterfront by the two-level elevated Embarcadero Freeway. One salutary effect of the quake was that the freeway was so damaged it had to be torn down. Overnight, San Francisco was again both physically and visually connected to the Bay. The city has taken advantage of this connection with a series of redevelopment projects, including a light-rail line, waterfront public spaces, the new Giants baseball stadium, and numerous other projects that had been fueled, up to this year, by the booming economy.

One of the last projects of the San Francisco waterfront redevelopment is finally happening. Located right across the Embarcadero from the new Gap headquarters building, Rincon Park is actually three projects: a park and two restaurants. The new park, an extension of the already lively waterfront public spaces, is a collaboration between the Office of Cheryl Barton in San Francisco and the Olin Partnership of Philadelphia, and will be home to an Oldenburg sculpture. The restaurants, both to be operated by famous restaurateur Reed Hearon, will occupy buildings that help define three sides of a public plaza on the park's eastern end. One restaurant is being designed by the office of Jim Jennings, and the other by Pfau Architecture, both of San Francisco. The gracious placement of the buildings in relation to the park's arcing seat walls demonstrates the collaborative work established early on by the landscape architects and the architects to create common ground for their projects.

The restaurants, at 8,000 square feet each, will be glassy pavilions in a clearly Modernist language. Both firms are well-respected for their applications of this idiom. Pfau Architecture, known for experimental materials and tactile surfaces, is using glass and steel for a luxurious restaurant with southern French cuisine. Jim Jennings, revered for his almost Zen-like Minimalism and refined detailing, will assemble similar materials for the other eatery with more casual southern Italian fare. The public plaza between the two restaurants will allow outdoor dining, protected somewhat from the winds off the water, with stunning views of the Bay Bridge, Treasure Island, and the Bay. *Lisa Findley*



The restaurants (left in plan) will anchor Rincon Park by the Olin Partnership and the Office of Cheryl Barton.

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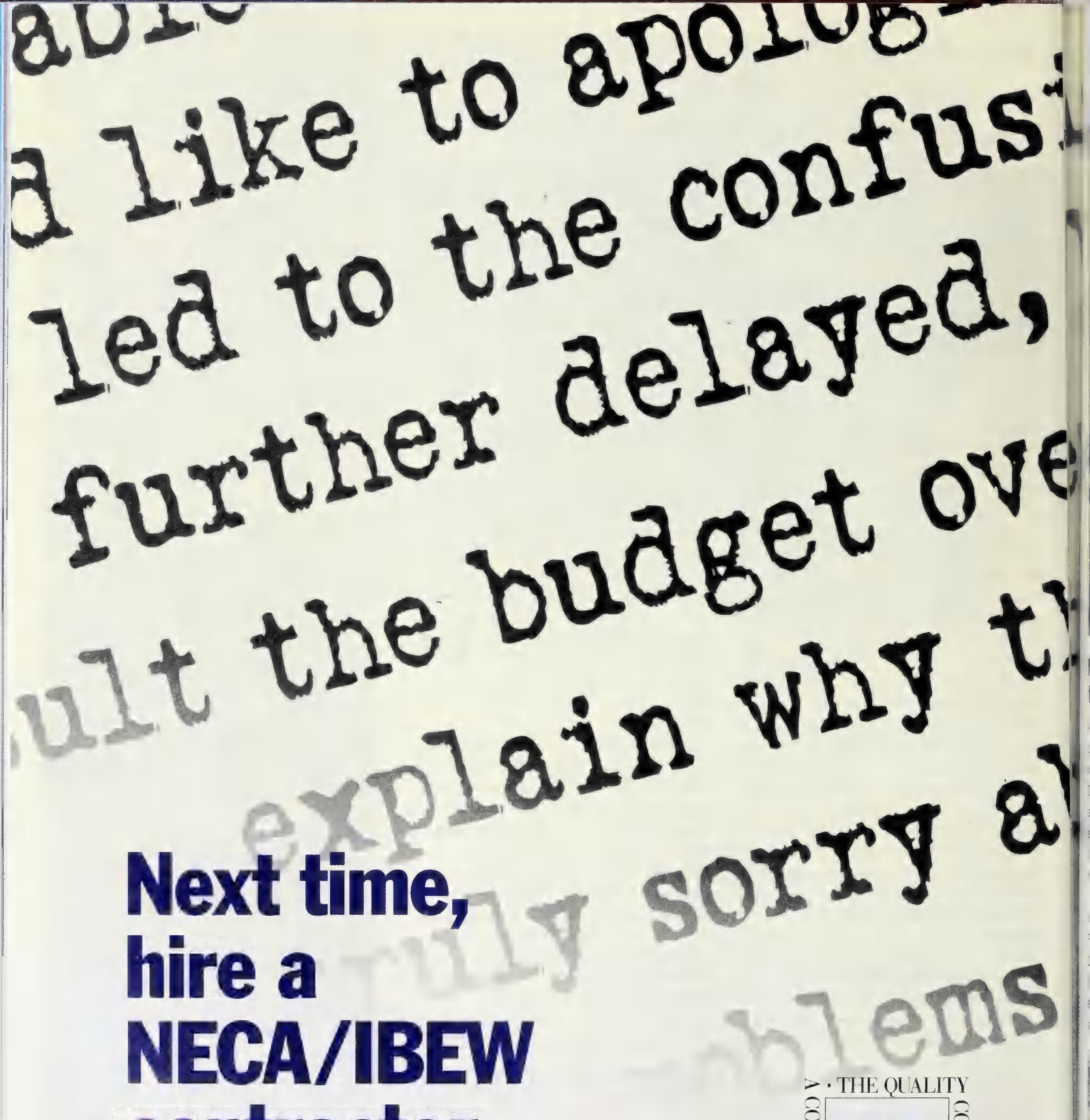

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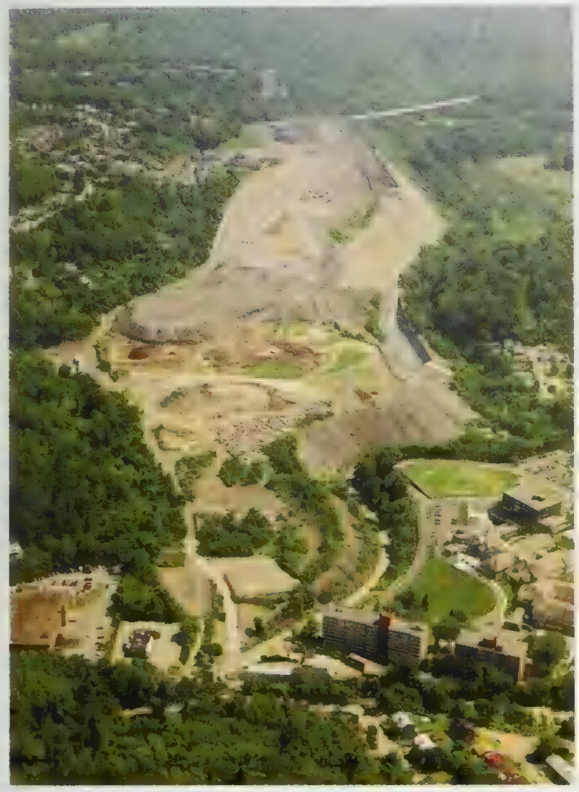


New neighborhood to rise on former slag heap in Pittsburgh

At a dramatic brownfield site in Pittsburgh, a New Urbanist residential development with a restored watershed is supplanting an industrial dump. Developers have sold the first units in Summerset at Frick Park, a $243 million project that will eventually have 713 residences on 234 acres. Memphis firm Looney Ricks Kiss developed the master plan.

Summerset is located in Nine Mile Run, a ravine and stream between Pittsburgh's 455-acre Frick Park and the Monongahela River. Between 1922 and 1972 the steel industry dumped 20 million tons of slag here, making an astonishing heap as high as 20 stories tall in some spots. The site lay dormant until 1995, when the city's urban redevelopment authority purchased it from the Duquesne Slag Company for $3.8 million. To counter Pittsburgh's population loss and tax-base erosion, Mayor Tom Murphy formed a public/private partnership to make Summerset Pittsburgh's first major new neighborhood since World War II. More than $15 million in public funds have been spent to grade and prepare the site, and the watershed cleanup has cost $7.8 million.

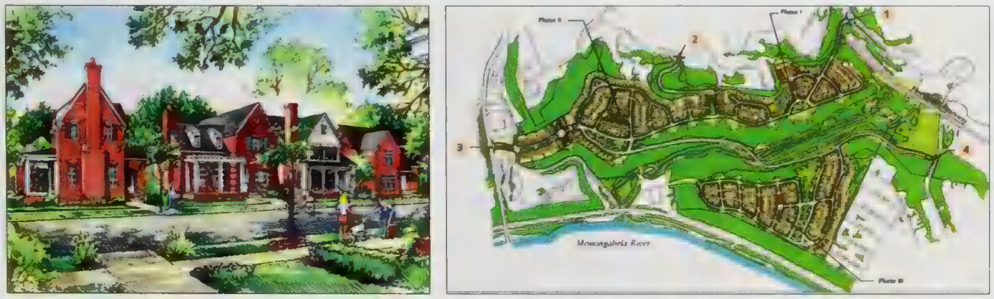
In early studies, Cooper, Robertson & Partners of New York and Urban Design Associates Architects of Pittsburgh envisioned a 1,200-unit development, but Pittsburgh landscape architects LaQuatra Bonci Associates recommended a reduction to 713 units to keep the stream open and minimize the considerable grading required.

Incorporating suggestions from an extensive community charrette, Summerset's master plan re-creates a traditional neighborhood where houses with front porches are close to sidewalks, and alleys minimize on-street parking. Looney Ricks Kiss, specialists in traditional housing, has designed three different housing types—cottage, village, and estate—which range from 1,400 to 3,500 square feet and cost from $180,000 to $635,000. Looney Ricks Kiss architect Mark Jones says, "We took the symbols and scale of the surrounding communities, but developed the new floor plans that people want."

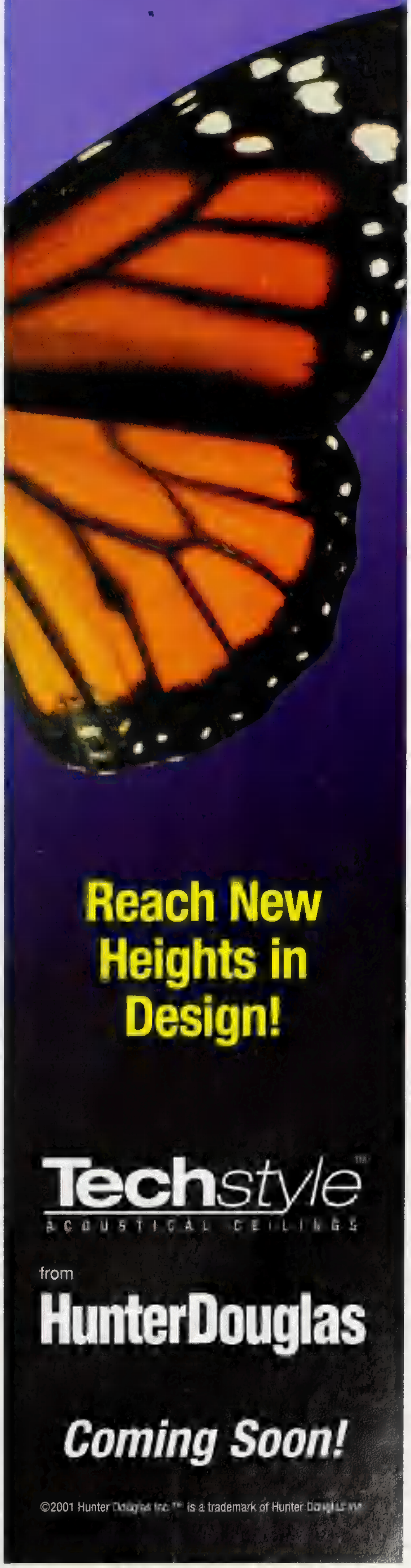
Construction will be in three phases over 10 years. The $42 million first phase will include 72 single-family homes, 81 townhouses, and a 48-unit apartment building.

The city of Pittsburgh owns the land and will profit on each home sale, anticipating more than $21 million in profit in 10 years.

Charles Rosenblum



Looney Ricks Kiss Architects has developed the plan for Summerset (right), to be built on a former slag heap in Pittsburgh (top). The development will include 713 homes on 234 acres.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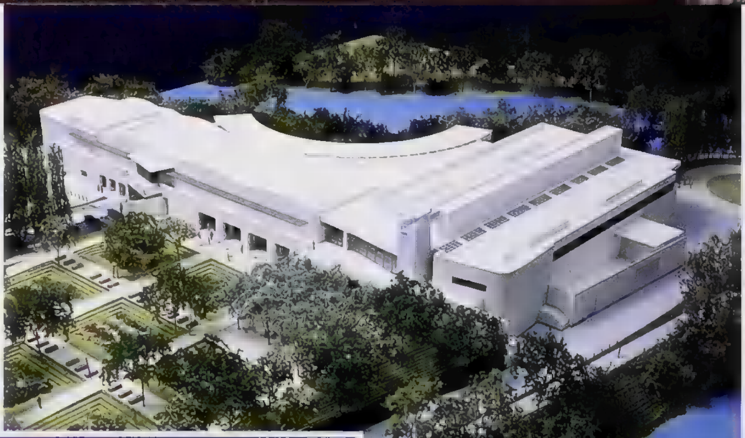
CIRCLE 21 ON INQUIRY CARD

American Center for Wine, Food and the Arts by Polshek Partnership nears completion



The American Center for Wine, Food and the Arts will include galleries, a restaurant, and a kitchen garden.

California winemaker Robert Mondavi is widely credited (and blamed) for helping to transform the Napa Valley into a high-end tourist destination. His latest project is taking shape in the city of Napa, at the valley's south end, which is often bypassed by tourists heading to the wineries. The $50 million American Center for Wine, Food and the Arts, designed by New York–based Polshek Partnership, will open in November and be called Copia, after the Roman goddess of abundance. Mondavi himself kicked in $20 million and enlisted support from many area wineries.

Polshek Partnership's Robert Young says that Mondavi and the directors "were adamant that this not be just a 'museum' to food and wine, but a place where people will share their connections with food and wine as expressions of American culture." On two floors within 82,000 square feet, Copia will have galleries, offices, kitchens, a restaurant, classrooms, a 500-seat amphitheater, and an elaborate kitchen garden (based on gardens at the Villandry chateau in France's Loire Valley).

The most striking aspect of the design may be the unification between the structure and the elegant geometry of the landscape design. Douglas Findley, of Berkeley-based Peter Walker Partners, created a grid of 45-foot-square plots for the kitchen gardens, and a long allée that brings visitors from the vine-planted parking lot to Copia's entrance. The garden grid relates directly to the grid on which the building is based; the playful wave roof adds to the grids' rhythm.

The double-height, glass-walled gathering space with a view to the Napa River could be too roomy when not filled for a banquet, but that's likely to depend in part on how the space is furnished and how visitors use it.

Copia's mission and the region's climate could have set the stage for an environmentally responsive building. The architects specified some local materials but needed a larger budget for more aggressive "green" efforts. *Kira L. Gould*

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CIRCLE 22 ON INQUIRY CARD

News Briefs

Weiss/Manfredi to design Seattle Olympic Sculpture Park New York-based architecture firm Weiss/Manfredi was selected in June to be the lead design firm for the Olympic Sculpture Park, which will be a public art waterfront park and the third venue for the Seattle Art Museum. Competition finalists were Michael Van Valkenburgh Associates, Michael Maltzan Architecture, Tom Leader Studio, and Caruso St John Architects.

Cubs propose more seats for bleacher creatures The Chicago Cubs announced plans in June to add 2,100 seats to the left- and right-field bleachers at Wrigley Field. The new bleachers, which would extend out and over Sheffield and Waveland Avenues, may block some views of the field from homes and rooftops bordering the ballpark. Pending city approval, the Cubs want the seats in place for the 2002 season.

Roy Thomson Hall as it will appear when renovated.

Major renovation planned for Toronto's Roy Thomson Hall The Toronto firm Kuwabara Payne McKenna Blumberg (KPMB) has been chosen for a $13 million interior renovation to Roy Thomson Hall, home of the Toronto Symphony Orchestra. The two-year project will require the hall to be closed for 22 weeks, from March to August 2002. Roy Thomson Hall, completed in 1982, was designed by Canadian architect Arthur Erickson. Toronto Symphony Orchestra director Jukka-Pekka Saraste has publicly expressed frustration regarding the acoustics. Sound will be improved by acoustics consultant Russell Johnson of New York–based Artec Consultants.

Hyatt Regency Cleveland in the renovated Arcade.

Hyatt opens hotel in renovated Cleveland Arcade Following a $60 million, 18-month renovation to the historic Arcade, the Hyatt Regency Cleveland at the Arcade opened in May. The 111-year-old Arcade, a National Historic Landmark, was once the center of retail in downtown Cleveland and served as a model for indoor shopping malls. The renovation was completed by Sandvick Architects of Cleveland and Brennan Beer Gorman Monk of New York. The first two floors of the main arcade concourse will include 40 shops, and 293 hotel guest rooms will be in two nine-story towers and the top three floors of the five-story concourse. The opening of the Hyatt and the renovation of the Arcade are part of the ongoing revitalization of Euclid Avenue in Cleveland.

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Team IMI's involvement with The Waterfront, a $300-million, 265-acre retail, residential, commercial and entertainment complex located on the site of a former USX steel fabricating plant six miles from downtown Pittsburgh, began when Continental Real Estate, Columbus, Ohio, the project's developer, and David Benjamin Meleca, the architect, started site work. Team IMI helped by first offering solutions to Continental's masonry construction needs. But since Continental was an out-of-town developer, Team IMI's most valuable assistance came in identifying and reviewing the work of local union contractors who might be appropriate for a project of this size. And after visiting the IMI training center, Continental knew that quality workmanship wouldn't be a problem on their project. Team IMI's staff of architects, engineers and construction consultants was also able to provide a comprehensive package of masonry-related technical services. The final result? A project fully staffed with world-class union masonry craftworkers.

Of course, The Waterfront in Pittsburgh is just one example of how Team IMI is making a real impact in the masonry construction industry. Thanks to comprehensive training programs at IMI's National Training Center and around the country at satellite centers, Team IMI is helping to meet the need for skilled union craftworkers and contractors nationwide. Team IMI mobile training units also make it possible to offer specialized training on your job site. And our technical expertise in codes, specifications and design trouble-shooting delivers the final piece of the puzzle. In short, with Team IMI, you're assured that the world's best union masonry craftworkers and contractors will always be available for your project, ensuring quality and imagination every step of the way. **To find out more, call 1-800-IMI-0988 or visit www.imiweb.org.**

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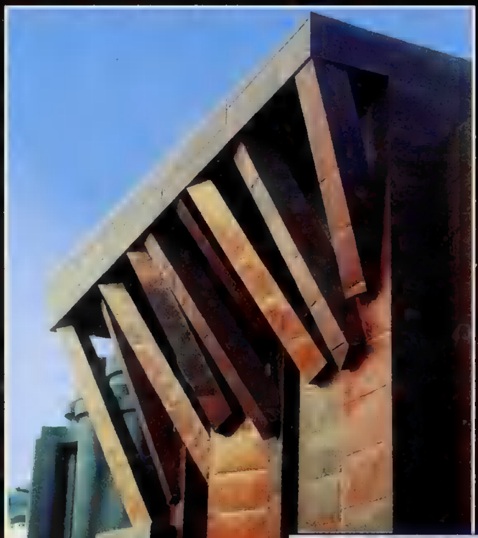

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Dates & Events

New & Upcoming Exhibitions

Albert Kahn: Inspiration for the Modern
Ann Arbor, Mich.
June 2–October 21
Explores how Kahn's industrial architecture inspired the development of international Modernism. Includes works of art and architecture by many of Kahn's contemporaries, such as Diego Rivera and Le Corbusier. At the University of Michigan Museum of Art. Contact 734/764-0395 or see www.umich.edu/~umma.

Equilibrium: The Architecture of Nicolas Grimshaw & Partners
Zurich
June 7–July 21
The firm's work is presented in a series of aluminum flight cases that display mock-ups, fabrics, models, and drawings. Coincides with the publication of *Equilibrium,* the latest monograph on the firm. At the Architektur Forum Zurich. Contact 41/1252 92 95 or ngp@ngrimshaw.ch.

Landscapes of Retrospection
Still Rooms & Excavations
Pittsburgh
June 9–September 2
Landscapes of Retrospection shows how British 18th- and 19th-century architecture was recorded in watercolors and drawings. *Still Rooms & Excavations* documents the expansion of the California Palace of the Legion of Honor and the excavation of a potter's field beneath it. At the Heinz Architectural Center at the Carnegie Museum of Art. Contact 412/622-3131 or see www.cmoa.org.

Out of the Ordinary: The Architecture and Design of Venturi, Scott Brown and Associates
Philadelphia
June 10–August 5
Presents over 250 drawings, models, pieces of furniture, and reconstructions of building elements, many exhibited publicly for the first time. At the Philadelphia Museum of Art. Contact 215/684-7860 or see www.philamuseum.org.

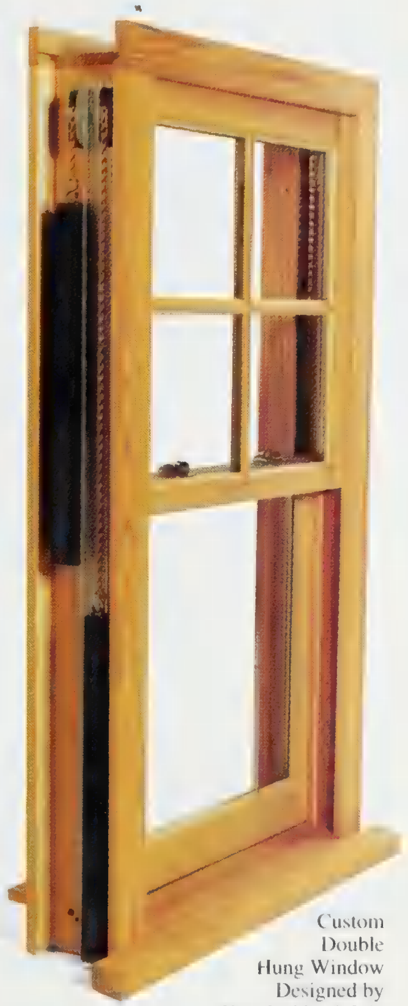
Mies van der Rohe & Louis Kahn Drawings
New York City
June 19–July 31
Displays a selection of drawings, including the controversial sketches Mies made of the Barcelona Pavilion in 1938 in which the banner of the Third Reich is featured. Forty drawings and models of Kahn's Kansas City Office Building are also shown. At Max Protech Gallery. Contact 212/691-4342 or see www.maxprotech.com.

Mies in Berlin
New York City
June 21–September 11
Exhibits work from the early career (1905–1938) of architect Ludwig Mies van der Rohe. Though Mies is known mostly for his American Modernist glass skyscrapers, this exhibition will focus on early influences. At the Museum of Modern Art. Contact 212/708-9400 or see www.moma.org. Exhibition complements **Mies in America.**

Mies in America
New York City
June 21–September 23
Exhibits work from the late career of the German architect Ludwig Mies van der Rohe, after he arrived in America in 1938. The Seagram Building in New York and the Farnsworth House in Illinois are the show highlights. At the Whitney Museum of Art. Contact 212/570-3600 or see www.whitney.org. Exhibition complements **Mies in Berlin** (see preceding entry).

Glass of the Avant-Garde: From the Vienna Secession to Bauhaus
New York City
August 21, 2001–January 6, 2002
Exhibits the collection of 19th- and early-20th-century Eastern European glass from the Museo Nacional de Artes Decorativas in Madrid. At the Cooper-Hewitt, National Design Museum. Contact 212/849-8400 or see www.si.edu/ndm.

Flushed with Pride
Stoke-on-Trent, England
August
In tribute to that indispensable piece of ceramics: the toilet. Examines the history of sanitation, including the development of bathroom tiles and sinks. At the Gladstone Pottery Museum. Contact 44/1782 319232 or see www.stoke.gov.uk/gladstone.



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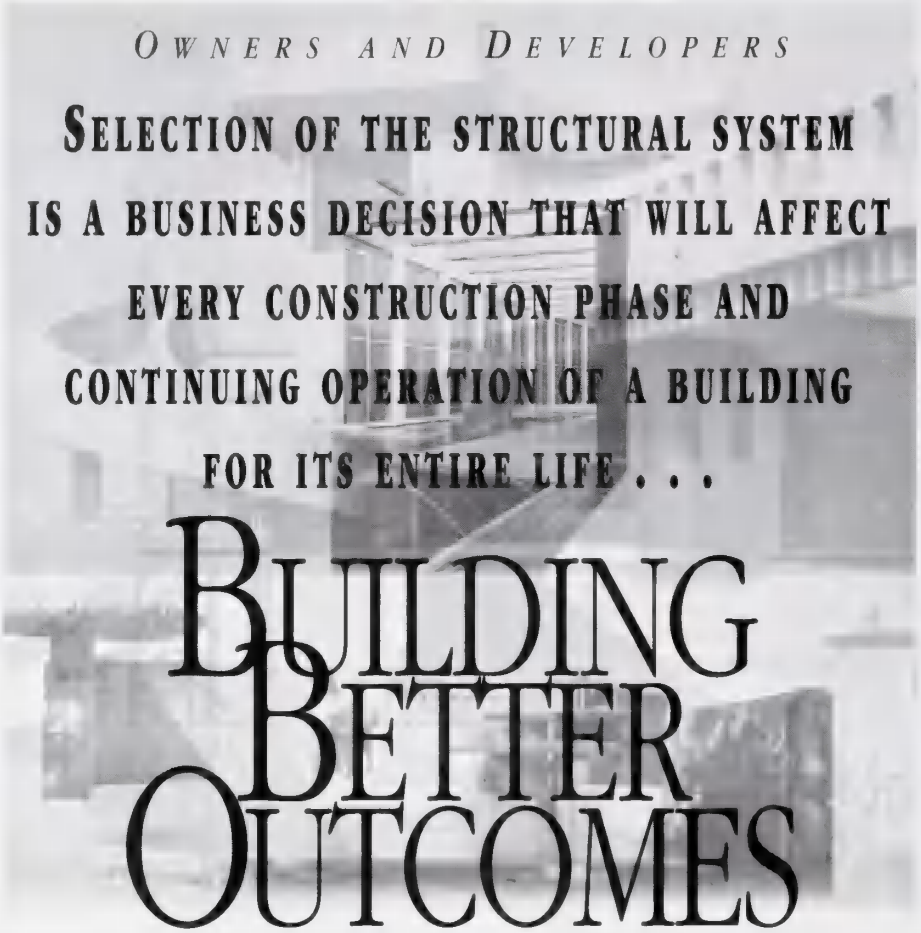

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Dates & Events

Ongoing Exhibitions

Frank Gehry, Architect
New York City
Through August 26
Exhibits work from the 40-year career of the architect and his firm, Frank O. Gehry & Associates. At the Solomon R. Guggenheim Museum. Contact 212/423-3500 or see www.guggenheim.org.

Conferences & Conventions

MESH International Landscape Architecture Conference (EDGE VI)
Melbourne, Australia
July 9–11
MESH is the sixth in a series of student-run conferences. Speakers from all over the world will address landscape infrastructure in the city of the 21st century. At RMIT University. Contact 61/3 9925 3806 or mesh@rmit.edu.au.

National Marketing Conference of the Society for Marketing Professional Services
Orlando
August 8–11
This annual event draws 750 CEOs, marketers, and business developers from architectural, engineering, planning, interior design, construction, real estate, and specialty consulting firms. Contact 800/292-7677 x14 or melanie@smps.org.

Restoration & Renovation
New Orleans
September 7–8
The only trade show and conference for the rehabilitation of building interiors, exteriors, landscapes, streetscapes, and historically inspired construction. Contact 800/982-6247 or see www.restorationandrenovation.com.

Competitions

Construction Specifications Institute Specifications Writing Competition
Deadlines begin August 3
Awards are available for project manuals, shortform specifications, outline specifications, preliminary project descriptions, and product binders. Contact 800/689-2900 or see www.csinet.org.

E-mail your submissions for Dates and Events to ingrid_whitehead@mcgraw-hill.com

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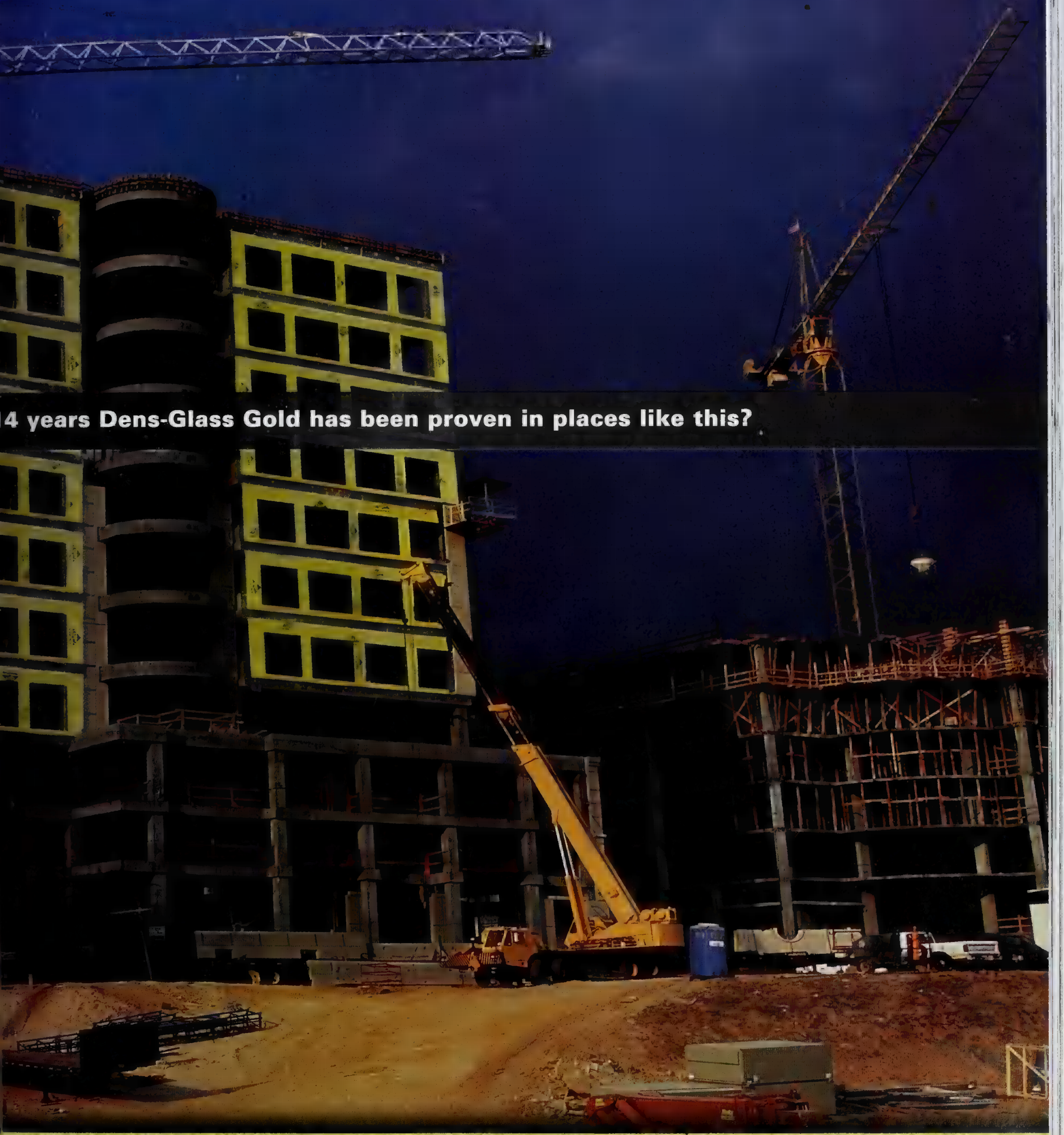
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CIRCLE 29 ON INQUIRY CARD

With a love of the spectacular, Swedish architects embrace supercharged aesthetic

Correspondent's File

By Nicholas Adams

Older colleagues have often told me about their incandescent impressions of Swedish new towns in the 1950s. With their busy community centers, swift connections to town via public transport, and attractive public spaces, this was the stuff of dreams for American architects in the age of Robert Moses. Since then, few Swedish projects have created a similar stir. Sweden is reserved for the "warhorses-of-Modernism" pilgrimage (Gunnar Asplund, Sigurd Lewerentz) or those quaint models of 1950s social planning at Vällingby admired by my colleagues. What happened to Swedish architecture? To investigate this silent space, I recently spent months visiting new buildings in Sweden.

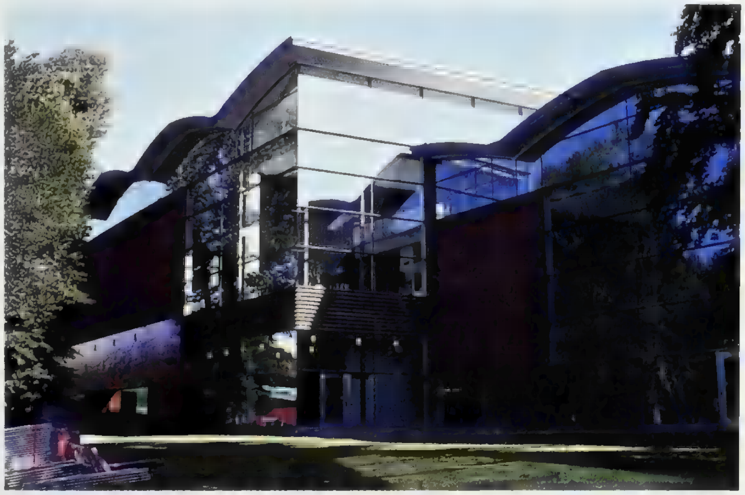
Of course, silence is an illusion created by distance. Up close Sweden has a flourishing architectural community centered around its schools of architecture and represented in its thick periodical literature. *Arkitektur* is the most widely circulating architectural monthly in Sweden; other magazines cover architecture along with interior design, and there's a rich exhibition program at the Architecture Museum in Stockholm. Added to the mix are architectural critics at the major newspapers, and frequent reports from abroad—excellent coverage, for example, in one of the major dailies, of the last of the ANY conferences.

If dialogue about design seems intense in Stockholm, even Stockholmers admit (through gritted teeth) that some of the most interesting architecture is being built on the west coast (around Gothenburg) and in the south (around Malmö). Three of the busiest design-oriented firms, Gert Wingårdh; Erséus, Frenning & Sjögren; and Jais-Neilsen & White have their main offices outside of Stockholm.

So what is the problem? Why does Sweden seem to be out of phase with the rest of the design world?

Look back to the period from 1965 to 1975, following the construction of the postwar new towns. With long waiting lists for apartments, the government undertook a massive building campaign using newly developed standardized building techniques. During the *rekordåren,* or record years, a million new dwellings were created, but unfortunately the values implicit in the older social housing were lost in sheer mass. It was *betong och tristess*—concrete and gloom. Just as the 1986 murder of Prime Minister Olof Palme was a watershed in Swedish life and self-image, so the *rekordåren* marked Swedish architecture.

Postmodernism, arriving in Sweden in the mid-1970s, was a welcome relief. It reconnected Sweden to a larger international debate, making it possible to talk about Peter Celsing's shifted grid of the Riksbank, completed in Stockholm in 1976, in the same breath as Aldo Rossi or Peter Eisenman. Moreover, Postmodernism stimulated talk about an "alternative tradition" of Modernism linking Asplund directly to Postmodernism. Some architects, such as Carl Nyrén, who first made a name in the 1950s with elegant boxes, turned to a stylistic Postmodernism in the 1970s and never returned to a Modernist aesthetic.



A swimming bath in Stockholm by Erséus, Frenning & Sjögren.

Modernist boxes not in style

The Modern box has not returned to favor. Stigmatized by the *rekordåren,* the box is too corrupted by past misuse to be worth exploiting today. As I talked with architects about what constitutes "interesting" and what constitutes "boring," it was clear, after some understated misunderstanding, that my modernistic aesthetic taste didn't play well. Claes Caldenby, professor of architectural history and theory at Chalmers Technical University in Gothenburg and one of the most acute observers of the contemporary scene, was too polite to say it out loud, but I could tell he was scandalized by the "boring" buildings I liked.

By contrast, the prevailing Swedish aesthetic sometimes seems supercharged. Martin Forsby, principal at Studio Grön, calls this a weakness for the spectacular. "Many Swedish architects use too many colors, too many angles, and too many materials," he says. The observation rings true. In buildings like Erséus Frenning & Sjögren's Hogskola in Jonköping (completed in 2000) or Arkitekturbolaget's Emigrants' House in Växjö (completed in 1999) and developments like Nybodahöjden in Stockholm (completed in 1998) or Norra Hamnen in Helsingborg (in progress)

Nicholas Adams teaches architectural history at Vassar College. He is preparing an exhibition, to open in November 2002 at the Canadian Centre for Architecture in Montreal, on Terragni's Casa del Fascio in Como and Asplund's Law Court addition in Gothenburg.

I sensed a restless desire for variety. At its best, this produces an emphasis on light and materials over form. But in the extreme there is cacophony. One building used almost every material possible, including wood, stone, steel, copper, ceramic, brick, and glass, on its facade!

One who handles this spectacular quality well is Gert Wingårdh—the closest Sweden comes to an architectural star. His entry for the Oslo Opera House (1998) was in the form of a large, gold Hershey-style kiss, and his boot-shaped skyscraper for Malmö has been published extensively (though dull reproductions miss the luminescent quality of the glass skin). Wingårdh looks to the organic tradition of Nordic architecture, to the work of the Finnish architect Reimio Pietilä. Nonetheless, he sustains this spectacular quality with a sharp attention to materials and a playful ability to surprise with unexpected gestures. And, when necessary, he is capable of restraint. He points with pride to a recent house along the west coast of Sweden that briefly calls to mind the best work of Alvaro Siza.

Problem contractors

Underlying these aesthetic issues, however, are other problems. Almost every architect I met complained about contractors and the status of the architect on the building site. The issue goes back to the *rekordåren*. Caldenby says, "When the government approached the contractors about their plans to build one million dwellings, the contractors extracted concessions, among them the right to substitute materials 'as like' to save costs at the discretion of the contractor." Rights of access to the site were curtailed, as were change orders. Rasmus Wærn, associate editor at *Arkitektur*, adds that in Sweden it is common for architects to be hired by the contractor and have no guaranteed access to the client. Cost savings are extracted at the price of visual effect. "When the contractor cuts costs, his solution is to use cheaper materials, changing stone to plaster on a facade, for example. The savings are illusory, for the cost of a facade is too small a portion of the total cost to make for significant savings, and the building now requires extra maintenance. The architect, on the other hand, could save money, if allowed, by rethinking functions. Without access to the client, though, this sort of change is difficult to accommodate."

An Ericsson plant in Lund, Sweden, designed by Gert Wingårdh.

With these aesthetic preferences and special problems, Sweden's sense of isolation remains strong. I asked Mårten Claesson, principal at Claesson Koivisto and Rune, one of the hipper architecture and interior design firms in Stockholm, whether there was any Swedish architecture he thought I should see? He was silent. Was there anyone he looked at with interest? Again silence. His firm's work mines the currently fashionable vein of Eurominimalism, but his rhetorical position reveals how segments of the Swedish architectural culture feel ambiguous about themselves. Isolation and particularity are a tradition in this country. ■

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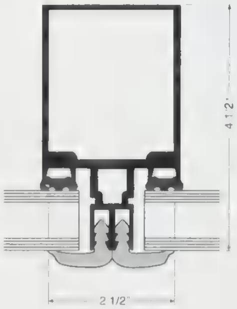

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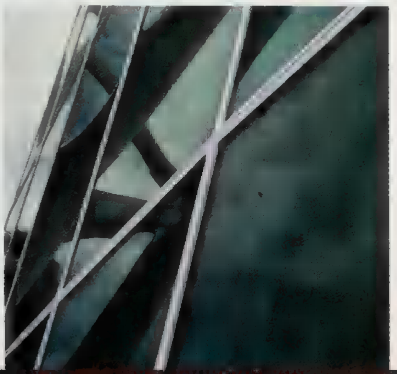

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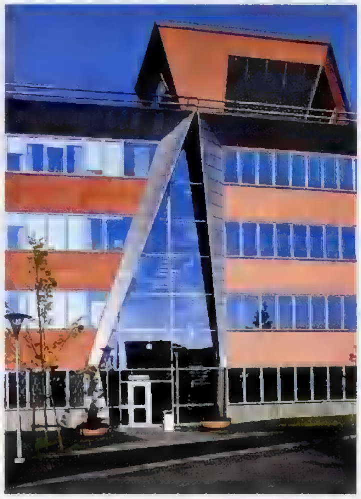

An Ericsson plant in Lund, Sweden, designed by Gert Wingårdh.

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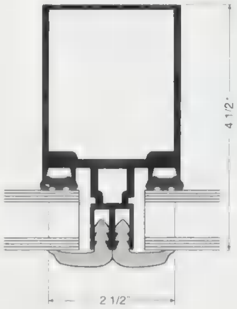

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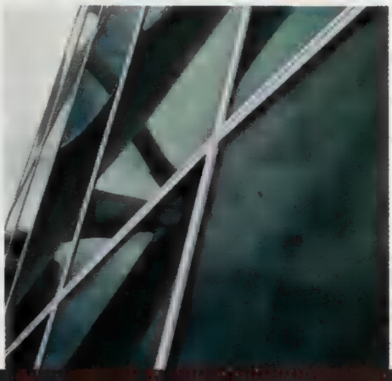

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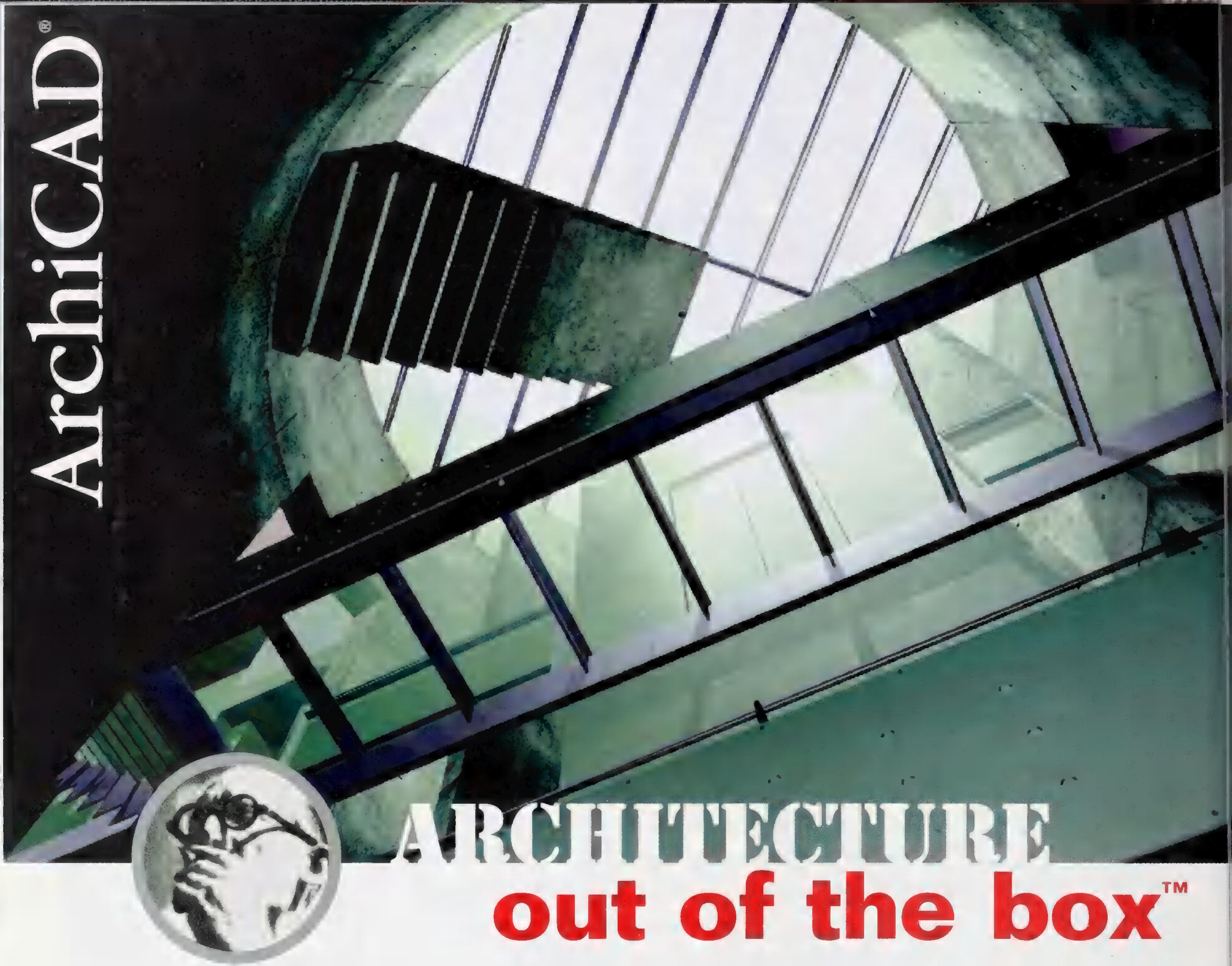

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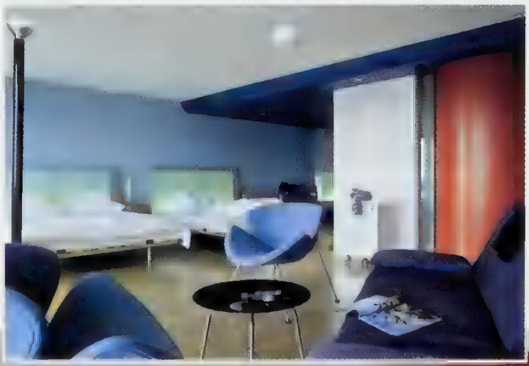
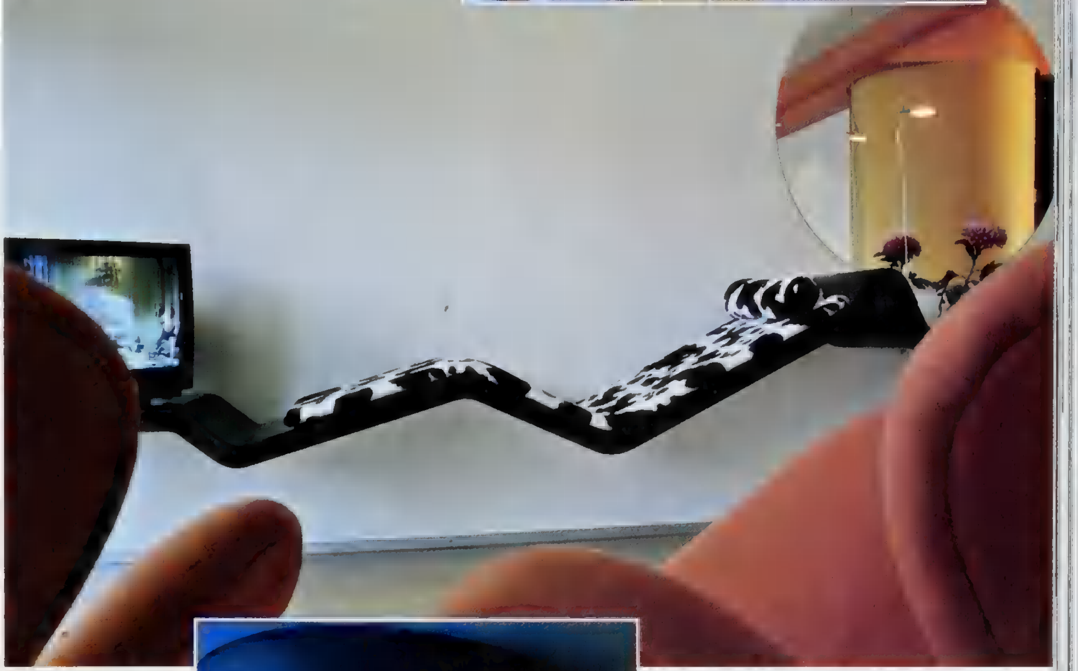




DESIGN

Alison Brooks: big ideas for Britain

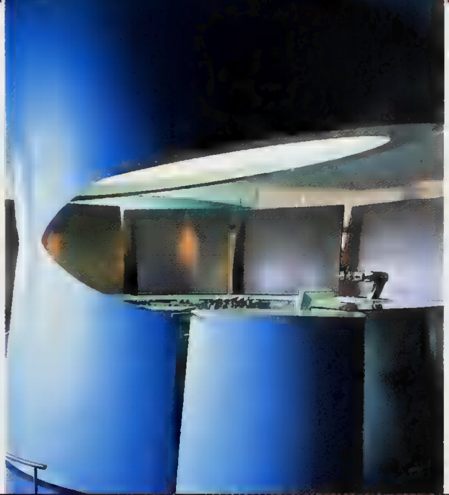
Like many young architects just starting out, Alison Brooks had grand ideas about what her architecture could accomplish. Newly arrived in London, she fell into a job with the designer Ron Arad, and the firm began to work in earnest on its design for the foyer of the Tel Aviv opera.

"We were doing something in Tel Aviv which was a completely free-form piece of architecture inside a really big, corporate piece of architecture," Brooks says. "We were doing it as a kind of protest piece, and we thought that the whole world was going to stop and take notice, and hundreds of operas were going to call us up and ask us to do their next opera building, which of course didn't happen."

Arad and Brooks did, however, receive commissions for several other projects in London, including the restaurants Belgo Noord and Belgo Centraal, which were as celebrated for their design as for their food.

Brooks had come to London from Ontario, Canada, where she had grown up, attended Waterloo School of Architecture, and worked briefly for A. J. Diamond. She moved to London to escape the Toronto architecture scene. Working with Arad in his Covent Garden furniture showroom afforded Brooks the chance to exercise her design skills for the first time. By the time of the Belgo restaurant commissions, Brooks had become a partner in the firm, but because of her evolving design philosophy, she decided that the time had come to set out on her own.

"I wanted to address some of the big, big problems that need to be addressed, particularly in London," Brooks says. "The quality of housing and the quality of public space really suffered in the 1980s under Thatcher, and there's been, in the last 10 years in London, a movement to start investing in the public realm and looking at things that haven't been looked at in a long time: new forms of housing, sustainable housing, urban design and infrastructure—all of that stuff that Britain's been pretty far



Atoll Helgoland Hotel, Helgoland, Germany, 1999
Alison Brooks Architects. Brooks' first large solo commission allowed her to rethink the interior spaces of the resort hotel, from the bistro to the bathrooms to the furniture. The bar (left) was formed by carving a wedge from a cylinder. Her "Shelf Life" design for built-in guest-room furniture (above) may go into commercial production.

continued from previous page behind on. So that was my big ambition."

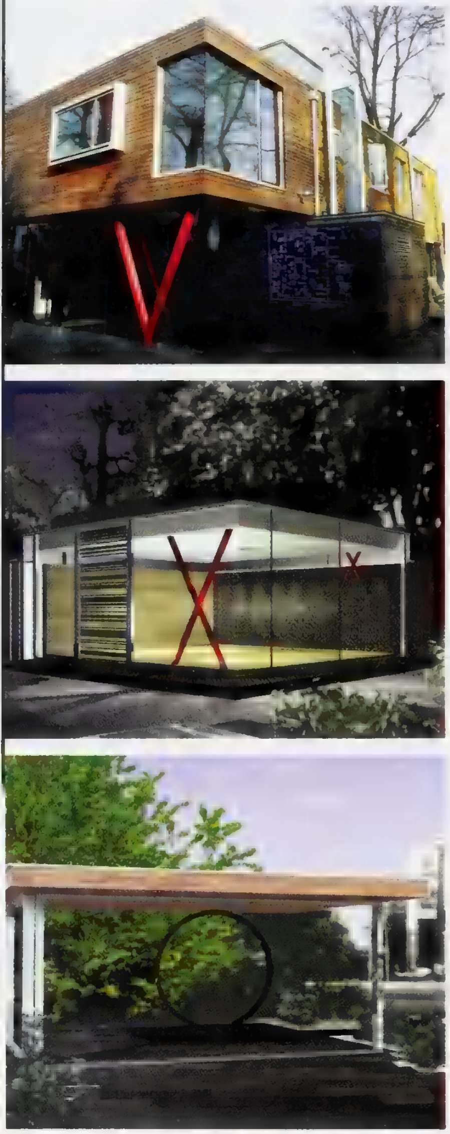
She set up her practice in a spare room of her home and sent letters to potential clients. She kept busy with some smaller jobs, including a scheme for an "egg" that was featured in a proposal for an intermodal train station in Bilbao, Spain. "These are the kinds of things you do when you've got a new practice and you're waiting for the big one to walk in the door," she says.

Then one of her letters paid off, and she was invited to design the guest rooms, interiors, and public spaces for a new resort hotel on a German island in the North Sea. The Atoll Helgoland Hotel has brought Brooks much acclaim in Europe, as well as new commissions for everything from private homes to university buildings. So from her first grand plans to working out of her house, Brooks is once again in a position to try to correct the problems she sees in British architecture.

But even considering her concern with social issues, she is difficult to pigeonhole as a designer. "The main point I try to make," she says, "is that the idiosyncrasies of each project drive different solutions. I really like the fact that people don't know what they're getting with me."

Kevin Lerner

For more coverage of Alison Brooks, including more photos and projects, or to submit your own projects, go to architecturalrecord.com/archrecord2



V-House, X-Pavilion, and O-Port, London, 2000–2001
Alison Brooks Architects. This conversion of a 1960s house includes a stair suspended by steel mesh and original, site-specific artwork by Simon Patterson. On the same site, a pavilion and carport will echo the house's alphabetic support column theme.

WORK

Associates at their best

The inaugural American Institute of Architects (AIA) National Associates Committee Awards were given at the AIA convention in Denver in May. The 2001 AIA Chapter of the Year at the Associate Level is the AIA Eastern Oklahoma chapter. Sheila Burns, Assoc. AIA, of AIA Northern Nevada was honored as the 2001 Associate AIA Member of the Year. Earning 2001 Associate AIA Member of the Year Honorable Mentions were Gail Suzuki-Jones, Assoc. AIA, of AIA Honolulu, and Christopher J. Perri, Assoc. AIA, of AIA North Carolina. F. Michael Ayles, Assoc. AIA, won the 2001 Associate AIA Special Accomplishment Award.

Ayles (left) and Burns

AIA Eastern Oklahoma has developed an array of programs for Associate members, including Architect Registration Exam (ARE) review seminars, a design charrette, site visits, and a community service project. Burns developed a library of ARE study materials for Associates in her chapter and has encouraged fellow Associate members to complete the process to registration. Taking his own initiative, Ayles has approached the Connecticut Architecture Foundation for funding for those having difficulty paying for the ARE and has formally presented to his state's licensing board concerning the increased cost of the ARE.

IDP Awards

The 2001 IDP Outstanding Firm Awards were also given at the AIA convention. Gorman Richardson Architects of Hopkinton, Mass., won the 2001 IDP Outstanding Firm Award and Kling Linquist of Philadelphia was awarded a 2001 IDP Outstanding Firm Honorable Mention.

LIVE

Life beyond the CAD terminal

This month in the LIVE section, take a look at the architectural art of Christian Culver, an Atlanta intern architect. His award-winning mixed-media compositions, called "Coalescent Constructions," combine pastels with architectural photography to explore contemporary perception of the built environment. This "On the Side" feature is the second in a series that also includes the furniture design of Manche Mitchell. See them both, as well as all of our other archived stories and features, on the Web.

Go to architecturalrecord.com/archrecord2 for more lifestyle features and information on how to submit your own work and ideas for the section.

TALK

Connect with your peers

Participation in archrecord2's TALK forums has hit a new peak with the introduction of our general questions forum and our ARE discussion group. We are quickly moving toward the establishment of a real community on the site. This month, we introduce a reader-suggested question: What architect, living or dead, would you most like to work with? (And you don't have to say your current boss.)

Go to architecturalrecord.com/archrecord2 to throw in your two cents.

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CIRCLE 34 ON INQUIRY CARD

Still the bad boy, Philip Johnson looks ahead at age 95

Interview

By Clifford A. Pearson

"After 50 years, you shouldn't do the same thing," says Philip Johnson, FAIA, describing his recent design for a multidomed, Byzantine-inspired addition to the Robert C. Wiley House, a chaste, Modernist box he designed in 1956. The comment, of course, could apply to Johnson's career in general. Architecture's great chameleon, Johnson has changed his colors with nearly every passing style—delighting the media with his nimble aesthetic and annoying colleagues who staked their reputations on the last wave. From his heralding of the International Style in 1932 to his stripped-down neoclassical designs for the New York State Theater at Lincoln Center (1964) and the Boston Public Library (1973) and his championing of Postmodernism in the 1980s and Deconstructionism in the 1990s, Johnson has always anticipated the next great thing. He has famously called himself "a whore," and some critics have agreed. As he turns 95 on July 8, he's still designing in many modes—from three-dimensional collage for a real-estate developer in New York City to whimsical historicism for a fan in Vermont. Now in partnership with Alan Ritchie, Johnson comes to his office in the Seagram Building three days a week and works on projects large and small, from New Canaan to Qatar. Recently he and Ritchie discussed their new work with RECORD's Clifford Pearson and Suzanne Stephens.

ARCHITECTURAL RECORD: *You have projects in various stages of development all over the world—from an addition to the Amon Carter Museum in Fort Worth, Texas, to a folly in Vermont and a mixed-use, urban redevelopment project in Liverpool, England. That's a lot to juggle, isn't it?*

PHILIP JOHNSON: It's a real dichotomy of types and scales, yes. But that's what keeps it fun. I tell Alan that as long as it stays fun, he can count me in.

AR: *Let's talk about some of these new projects. You have a 26-story residential tower on Spring Street in Manhattan that was recently announced. It doesn't look like anything else you have designed.*

PJ: It's all sculpture. I stacked a lot of blocks on top of each other to create a free-form sculpture that kind of recalls Dutch Expressionism from the 1920s. The blocks are Cubist forms, and each will have a different kind of brick to pick up the colors of the neighboring buildings, which are mostly 19th- and 20th-century warehouses. All of the windows will be old-fashioned double-hung windows. I call it "the revenge of the double-hung."

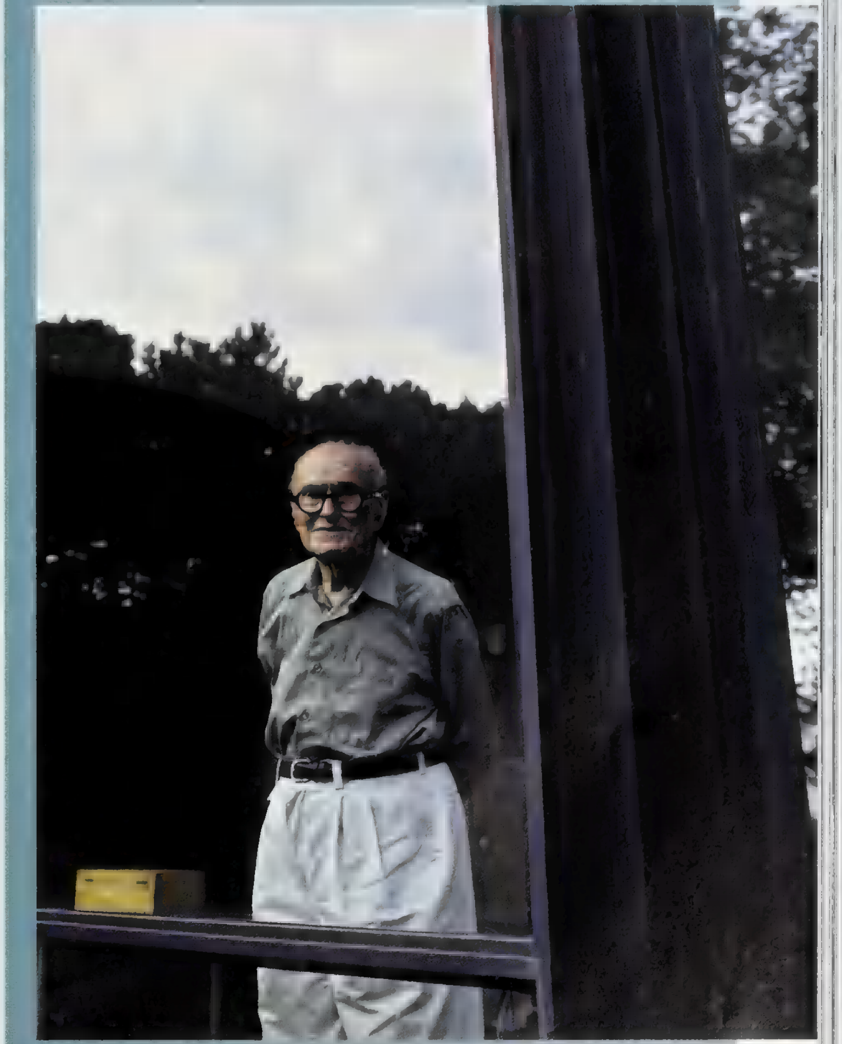
AR: *Would you call this a Modern building?*

PJ (laughing): Modern is what I say it is.

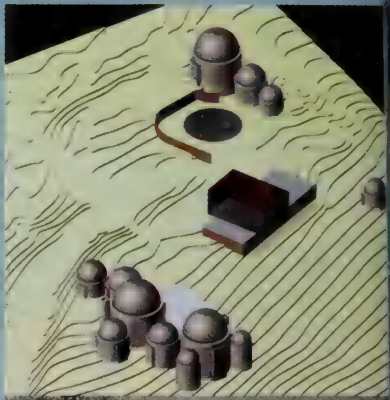
AR: *The project is right next to the historic James Brown House, which is an early-19th-century landmark. How does your high-rise building relate to its three-story neighbor?*

PJ: Well, it picks up the old windows

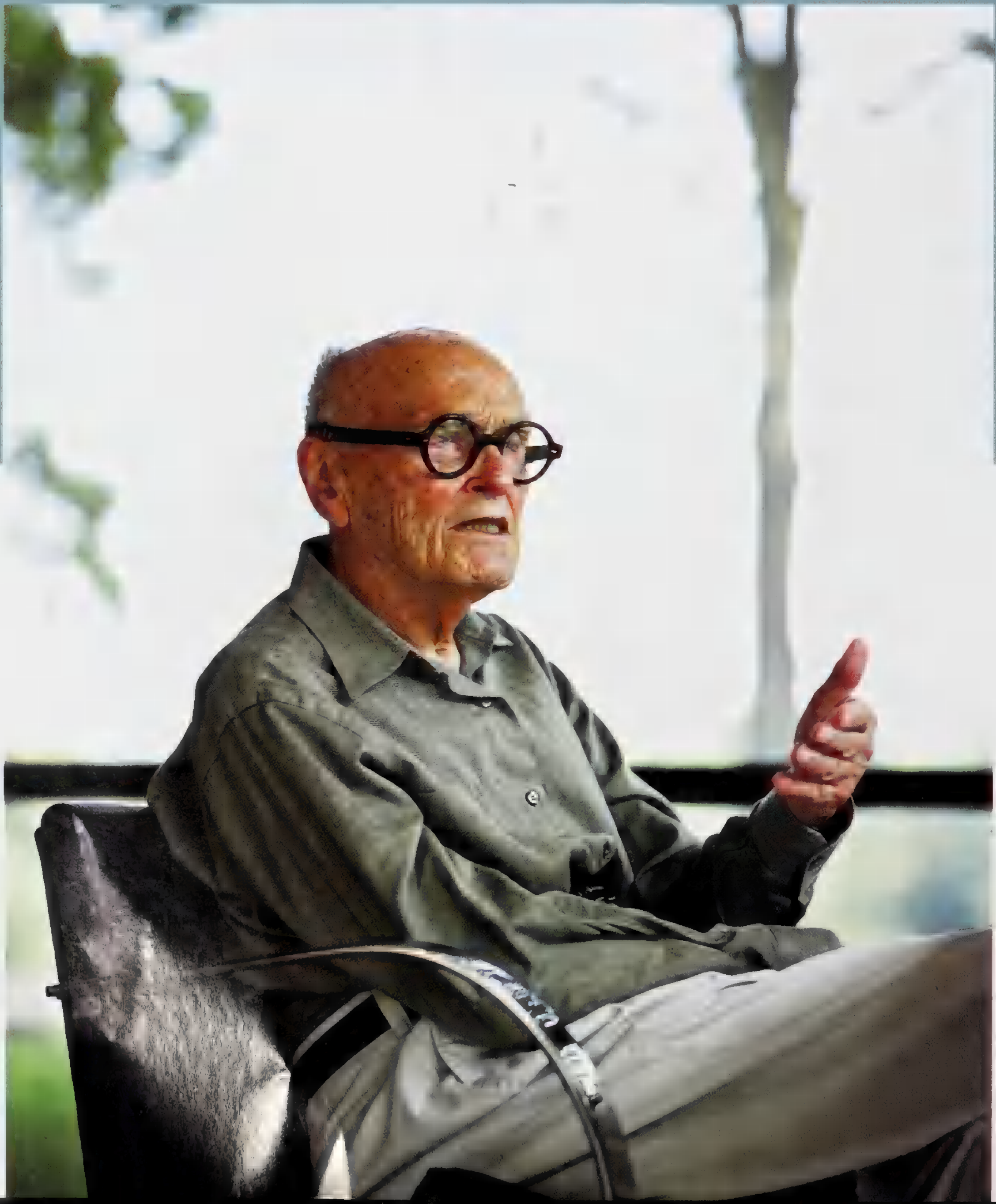
Johnson gazes from his 1949 Glass House in New Canaan, Conn., more interested in discerning the new landscape than in reflecting on his past. Quick to latch onto the latest whatever, he is now working with young firms such as Studio BAAD.



A sampler of current projects by Philip Johnson/Alan Ritchie Architects: (1) addition to the Robert C. Wiley House in New Canaan, Conn., featuring clusters of domed structures for guest quarters, a sculpture studio, and pool facilities on either side of the 1956 residence designed by Johnson; (2) sculpture for Chuck Meyer in Vermont; (3) Chavasse Park development in Liverpool, England, with Studio BAAD; (4) sculpture for Sheikh Saud Al-Thani-Doha of Qatar; (5) apartment building for Place Vendome Realty at 320 Spring Street in New York City.



Johnson during a recent interview with ARCHITECTURAL RECORD in New Canaan, Conn.



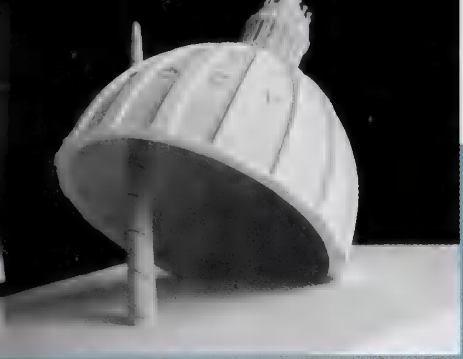
PHOTOGRAPHY: © EZRA STOLLER/ESTO

and the different colors of brick found in the area. The client, Nino Vendome, started with a sandwich shop next door, then moved into real estate. So he knows the area. Now he wants to contribute a piece of sculpture to the neighborhood.

Alan Ritchie: Architecture joining with sculpture—that's what we've been exploring in a range of projects over the past few years.

AR: *Tell us about the 4,000-square-foot addition to the Wiley House in New Canaan that you are designing for a young family.*

PJ: Well, it's a new owner and a new era, so we wanted to do something different. The addition will be two groups of domes—like clusters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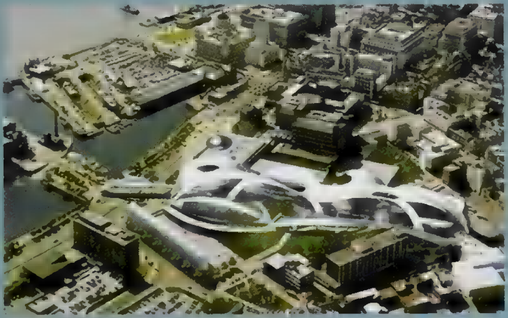
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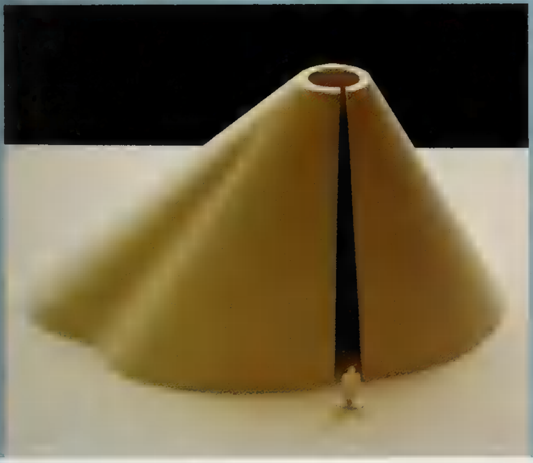
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of grapes of different sizes. Each dome will be stuccoed and a different color. Our idea is to use summer colors: red, orange, yellow. It will be like a village of Byzantine domes with no windows, just glass doors and light coming in from the top, like at the Pantheon.

AR: *You also have two small-scale projects: a sculpture in Vermont and one for the Sheikh of Qatar.*

PJ: The sculpture in Vermont I originally designed for my own backyard. It's the dome of St. Peter's, 20 feet in diameter and pierced by a unicorn horn. For your backyard you make a joke. It's ridiculous. The client, a man named Chuck Meyer—not to be confused with Richard Meier—loved the idea of a folly on his property. The dome will be cast in aluminum or some kind of fiberglass. The sculpture for the sheikh will be poured concrete 30 feet high and 50 feet wide. The key to the design is the opening, the slit in the continuous form.

AR: *You're working with a young British firm, Studio BAAD, on a big project in Liverpool. How is that going?*

Ritchie: It's been going through a difficult process. It's a large project—over 1.2 million square feet of shopping, movie houses, recreation, and park land linking the old heart of Liverpool to the city's docks and waterfront. The docks had long been cut off from the rest of Liverpool, and our site has been essentially a derelict park. The project goes up for city approval in September or October. The public seems to want it, but you never know what's going to happen. I figure we have a 50-50 chance of getting the okay. We're quite excited about the design, especially the roof structure, which is a swooping glass umbrella that covers but doesn't totally enclose the space. We worked with Arup on the engineering of the project.

PJ: The structure is like a Möbius strip, twisting and then curving back on itself. It's really quite interesting.

AR: *Sounds a little like your own career.* ■

In Rotterdam, the Netherlands Architecture Institute is presenting an exhibition "J.J.P. Oud—Philip Johnson, a Dialogue," on view until September 9. Johnson designed the curving structure in the middle of the exhibition as an homage to Oud, whose work he has long admired.

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CIRCLE 35 ON INQUIRY CARD

Sorkin finds a model in a Tennessee small town with a genuine sense of purpose

Critique

By Michael Sorkin

In my suburban Washington, D.C., childhood, I had a remarkable next-door neighbor, a grandfatherly figure called Bob Coe. Bob was a landscape architect—trained at Harvard—whose early career had been spent with the Olmsted brothers. A man of sincere liberalism, he signed on with the Tennessee Valley Authority (TVA) in the 1930s and was responsible for landscape design at a number of sites throughout the project.

The one that he spoke of most, though, was Norris—a planned community built in 1933–34 to house TVA workers who were building a giant dam nearby. Bob had lived in Norris, and it was there that he met and married his wife, Kay, a preternaturally kind Tennessee native who taught first grade for over 50 years. The two of them spent hours each week cultivating their beautiful garden which was, for me, a paradise—the most lovingly cultivated half acre I have seen before or since. I assumed Norris was a variation on this garden.

A couple of months ago, I finally had the opportunity to visit Norris and take a dam tour down the Clinch and Tennessee. Norris is lovely: The Garden City layout of the town is carefully informal and sensitive to the hilly topography, and it contains a number of astute spatial deployments, including a grouping of three houses around a common lawn that struck me as beautifully scaled and latently convivial.

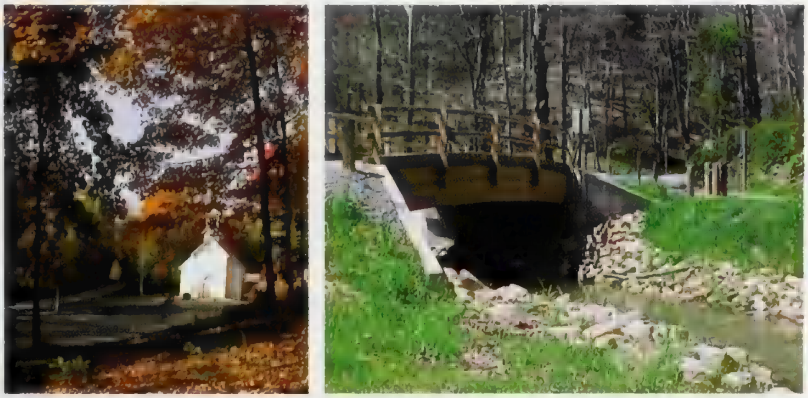
Contributing editor Michael Sorkin is an architect and critic based in New York City.

Throughout the town, I thought I could recognize Bob's rich, serpentine, and layered sensibility in landscaping grown lush.

The original houses that have survived are very small and inexpensively built but have a compact elegance. One mustn't overstate the consequences of 350 houses: The current atmosphere leans toward the funky, and Norris remains a very small place with a few modest shops and services, two schools, and several TVA labs and workshops. The vibe is tender, though—even moving. Kids are wandering the pathways at dusk. Neighbors are chatting in the commons.

Here, I thought to myself, was a genuine town, built out in the optimistic idiom of interwar modernity. At Norris, and nearby Oak Ridge, there's a lingering aura of purpose that exceeds the site planning. The plan conveys a way of seeing spaces as continuities, flowing in scale from the town to the river to its watershed to regional topography to the organization of the nation and beyond. The spectacular dam down the hill and the beautifully disciplined river are there to testify to what a town can do. A place with a grounding beyond economy, this is not a company town but its flip side. Its rationalism is gentle and its layout curvy. Those curves—understood as the contour-following outgrowth of a compact with nature—reflect a strong feeling for the welfare of the environment: an ecological vision, an idea of sympathy, not of discipline.

A recent visit to Taliesin revealed another classic intersection between form, ideology, and organization. Taliesin continues to draw both the shape and the reasons for its routine from the religio-architectural principles laid down by Mr. Wright. To the degree that these principles are complicit and shared, the place works wonderfully in both its hierarchy and its collectivity. Like Norris, the architectural frame still functions adaptably despite the inevitable ebbing of the force of the cultural project of Wrightian architecture. And the specificity is superb, a complex that continuously reads its own site.



Norris, Tenn., should be a model for town planning because of what Sorkin calls "its light lie on the land, its distributive dream, and its modesty."

Hyperbolic dissent

Not long after my trips to Norris and Taliesin I spoke at one of the periodic conclaves of the Congress for the New Urbanism (CNU), this one in Ann Arbor. I have had a modest career in the past few years playing Tim Leary to Andres Duany's Gordon Liddy at these events, offering hyperbolic dissent to his neo-traditional, generic planning strategies. The argument has some merit: It's no accident that Seaside and Celebration have become icons for creepy discipline and social control, symbols of fraud and camouflage, private interest masquerading as public, the opposite of Norris.

Not living in a very civic time, we do get a huge overproduction of surrogates and appropriations of civil life—the Disney effect. How to resist? I don't suggest that we must be Shakers or rural electrifiers to find reasons for shaping townscapes. But real town life is not simply a matter of consumption, of mass customization, or even of market-driven "choice." Not an original insight but one shared, I'm happy to think, by many in the CNU. Indeed, I became skeptical of my own interlocutory position at that conference in Ann Arbor. I felt a bond with the range of projects presented by a softer, more formally

Wright's Taliesin continuously reads its site and retains its original principles.

disinterested wing, including Peter Calthorpe, Bill Morrish, and Anne Vernez-Moudon, among others.

THE SUCCESS OF NORRIS IS IN THE REVALIDATION OF THE FOUNDING PLAN BY CONTEMPORARY EVENTS.

Norris is something I think all of us might agree on: We're all trying to keep alive the idea of a town, of the next Norris. Norris is no Disneyland—it's malleable and the intentionality is soft. It was founded in a real fantasy of the demos. The New Deal really was a big deal for a lot of people—Bob and Kay among them. The cluster of ideologies and strategies behind it readily attached (and were shaped by) both the pastoral planning of the Garden City movement and the organizational vision in the exponential thinking of Patrick Geddes and Benton MacKaye and other godfathers of the experiment. Refitted now for other ways of living, Norris succeeds in its revalidation of the founding plan by contemporary events and in its retention of strong vibe and community.

There are two big issues confronting town building today, and they are the same ones that produced and were addressed by Norris: environment and equity. Towns both organize and steward the environment, anchoring the natural economy. They are themselves produced from the countryside and, at the same time, they are its annihilation. Environmentally informed planning is the medium for declaring a truce. The recent flash of Bush terror—a scorched-earth policy from hell—showed how close to the surface the paranoia about recolonizing hard-won boundaries for sprawl is. This is a true civil emergency, and planning is the only answer.

Equity in property

Planning always engages questions of equity. In America, equity resides in property, and a town plan represents its division. But a real town creates a proprietorship that exceeds property: Town plans are the medium of negotiation between public and private rights, and freedom and power are as legible as can be. The plan is the medium for quantifying parity or scarcity—of space, of environmental quality, of architecture.

The beauty of Norris lies in its smooth enclosure of these desires. Its light lie on the land, its distributive dream, its modesty, and its aspirations for a culture and region larger than itself make it a model. ■

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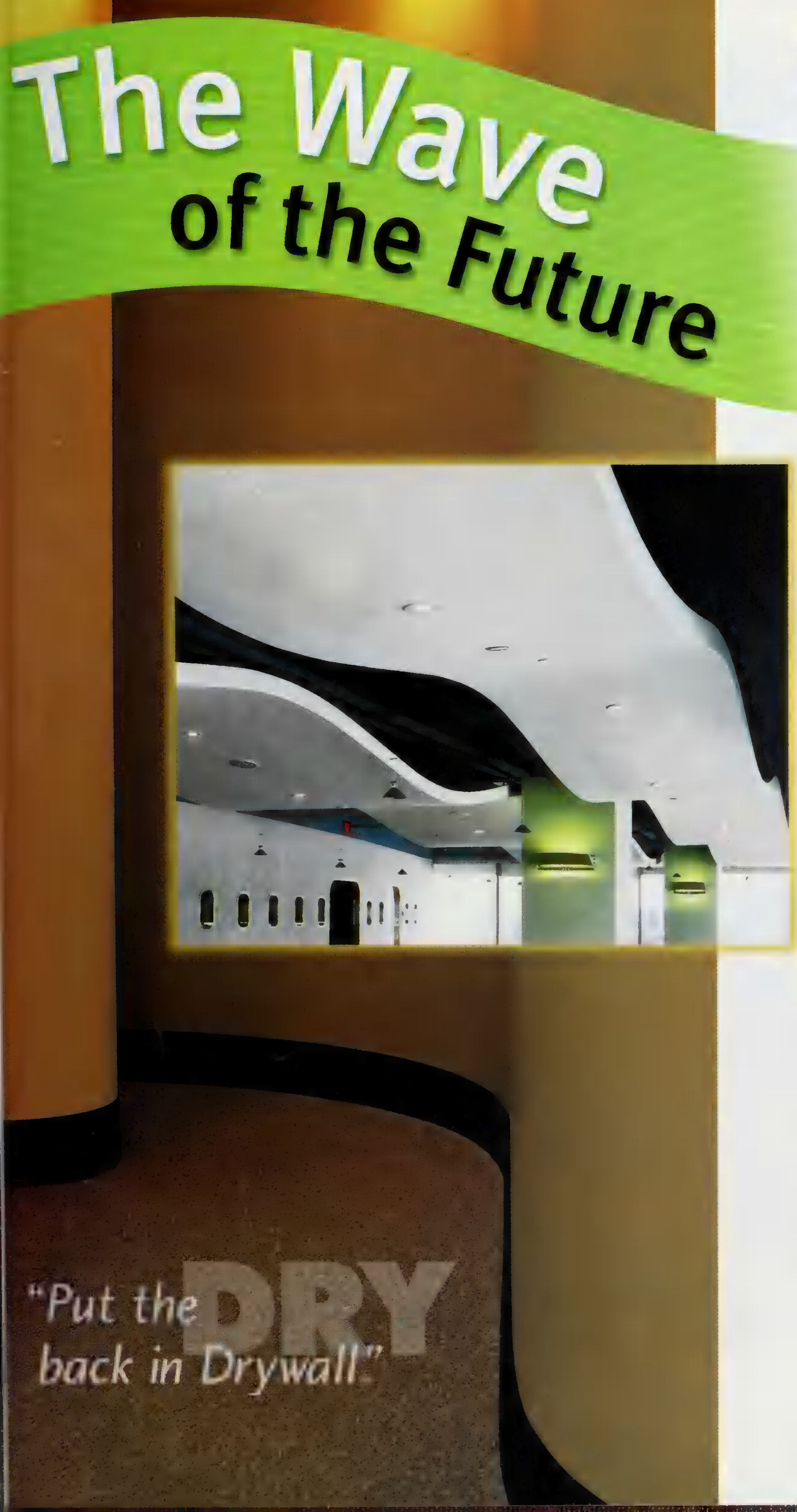

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Exhibitions

The Architect's Architect

Frank Gehry, Architect, *at the Solomon R. Guggenheim Museum, through August 26. Curated by J. Fiona Ragheb and Mildred Friedman.*

Frank Lloyd Wright was a household name by the time New York's Guggenheim Museum opened in 1953. Almost half a century later, Frank O. Gehry gained a similar universal name recognition when the Guggenheim Museum in Bilbao, Spain, opened to a standing ovation heard around the world. But proof that Gehry has become a branded entity, to borrow from marketing parlance, registered when his named was dropped on the television drama *Ally McBeal.* In an episode involving divorce proceedings, an architect is struggling to downplay his professional success in an effort to escape a costly settlement. At one point, the architect's attorney leaps to the aid of his client and shouts, "Hey, he's no Frank Gehry!" The writers obviously assumed that the audience would get it.

A chronicle of Gehry's ascension from iconoclast to cultural icon is currently on display at the Guggenheim Museum in New York. Curated by J. Fiona Ragheb and Mildred Friedman, the retrospective occupies the museum's entire spiraling rotunda, which, as everyone knows, was designed by fellow cultural icon Frank Lloyd Wright. Forty projects covering four decades are on view—furniture, houses, museums, performing arts centers, university buildings, and corporate headquarters. Hundreds of models, but relatively few drawings, demystify to a certain extent his seemingly idiosyncratic design process, revealing a discovery, rather than an invention, of form which is at once cerebral and visceral.

Gehry has always pushed the building envelope with daring angles and jarring intersections, from his now legendary Santa Monica house renovation (1978) to the Ray and Maria Stata Center at MIT (1998–), the grand finale of the retrospective. But his vocabulary changed from planar to undulating with the Vitra Design Museum in Weil am Rhein, Germany (1987–89). This turning point created a need for technology that could aid in the design and fabrication of increasingly complex forms. Partner James Glymph discovered CATIA, a three-dimensional modeling program used in aerospace engineering. Every project since the Fish Sculpture at Vila Olimpica (1989–92) has been executed using this technology.

The real pleasure for architects will be the occasional presence of the DNA code for Gehry's buildings—working drawings. Almost lost among the virtuosity of models and videotapes are complete sets of blueprints for three projects: Nationale-Nederlanden Building (1992–96), the Performing Arts Center at Bard College (1997–), and the Stata Center. The heart of the architect races. Here, the interface between CATIA modeling and traditional documentation is revealed to be almost seamless. The documents are exquisitely detailed. CATIA axonometrics describe the complex geometries with amazing logic.

The only disappointment is the large aluminum-mesh panels hanging from the skylights of the rotunda. Intended to recall the industrial materials of Gehry's early work, they're redundant in this richly documented context. As a matter of fact, they're vaguely reminiscent of a smoke screen, an unfortunate analogy.

There are grumblings that Thomas Krens, the museum's director, mounted this show as a public relations ploy to garner financial and political support for the next Gehry Guggenheim on the banks of the East River in Lower Manhattan. Granted, Gehry's scheme for the new museum occupies the first room of the show with seven study models and a large presentation model of the final design. And granted, Krens doesn't curb his ambition in his introduction to the show's catalog, when he prophesies that it "could come to be regarded as his greatest project of all." Still, it's hard to fault him. The success of Bilbao in no ways ensures that New York will coddle the architect or his ambitious scheme, as the powers in Bilbao did. Krens will still have to raise millions and maneuver through the byzantine bureaucracies—city, state, and federal—that govern, and often stifle, development of the island city's waterfronts. If this retrospective gets it built, then good.
Sara Hart

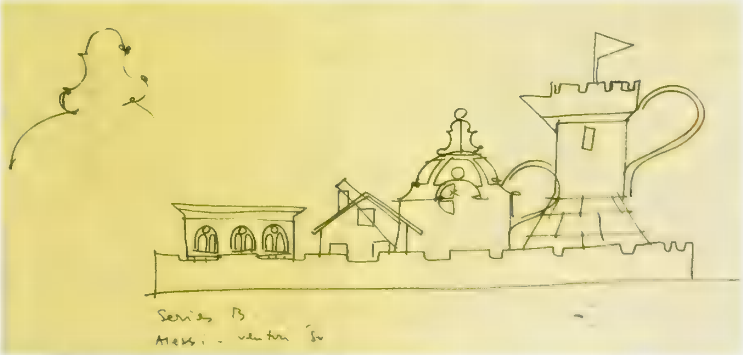
Computer rendering of the DG Bank Headquarters in Berlin (above left). View of the exhibition with aluminum-mesh panels in the rotunda (right).

Exhibitions

Go for Baroque

Out of the Ordinary: Robert Venturi, Denise Scott Brown and Associates Architecture, Urbanism, Design, *at the Philadelphia Museum of Art, through August 5, 2001. Organized by Kathryn B. Hiesinger with David B. Brownlee and David G. DeLong*

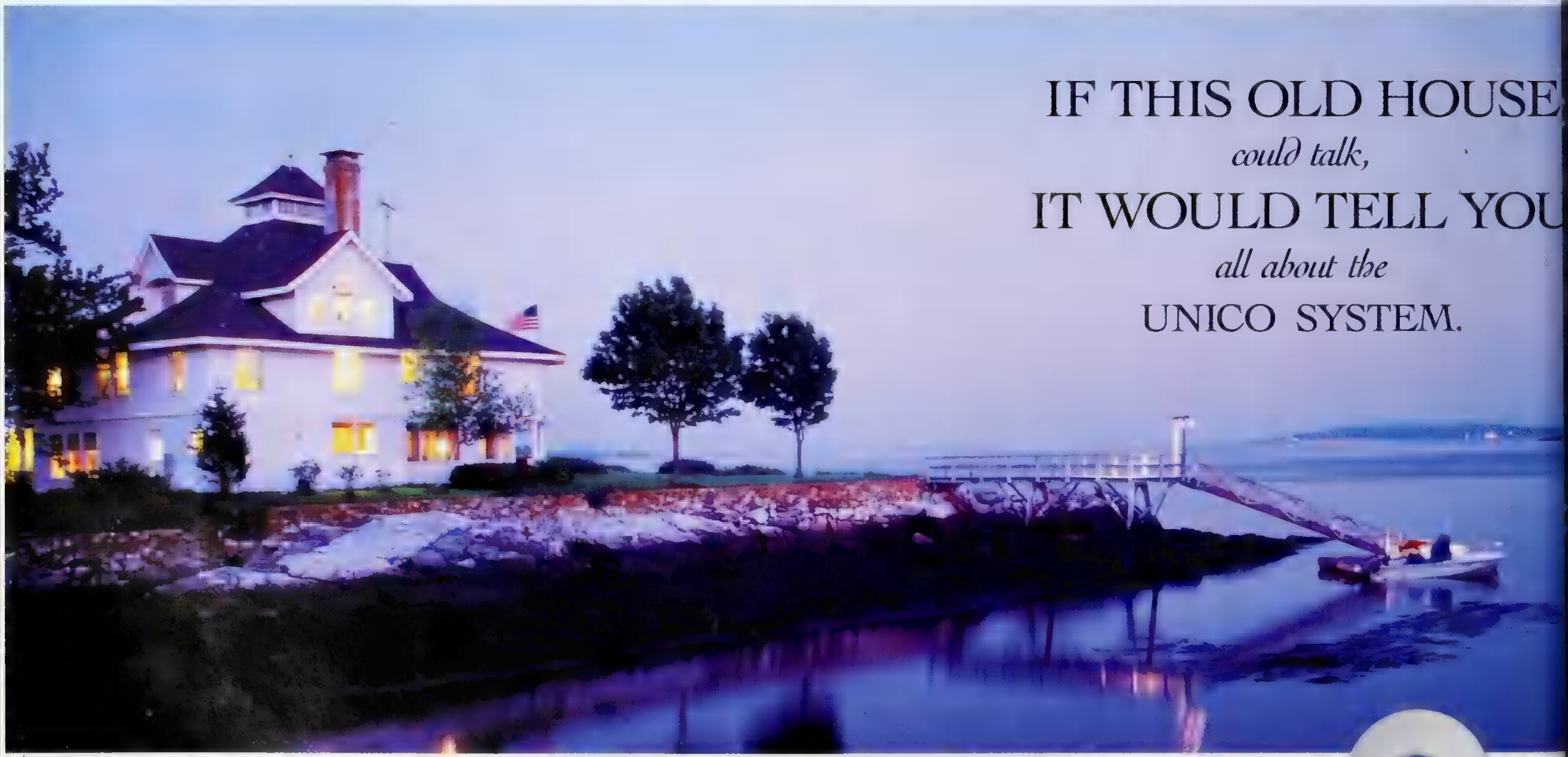
As a longtime admirer of the work of Venturi Scott Brown and Associates (VSBA) and the tireless intelligence of its partners, Robert Venturi and Denise Scott Brown, I've long wondered why they lost their once razor-sharp theoretical edge. Here's the team that so successfully skewered three decades of architectural pretensions. In the last few years the built work has achieved greater refinement, while on the theoretical side the "gentle manifesto" of the early years has segued into a defensiveness (on display in this exhibition in a room of VSBA's own design) as they have drifted to the outer edges of theoretical debate. Seeing the 40-plus-year body of work all together gave me a clue. In the early work, there's a layering of wall surface, a playing of inside against outside, and an experimentation with large sculptural gestures that makes such projects as the unbuilt town center for Canton, Ohio, gutsy, passionate, poignant, and elegiac. You can see the connection to the theatricality and the spatial richness of Baroque Rome, which Venturi opened our eyes to in his classic book *Complexity and Contradiction in Architecture*.



Tea and coffee service for Alessi, 1980–83.

But this plasticity has drained out of the firm's work over the years. Their famous notion of the decorated shed—the building as a box with information applied to it—may have straitjacketed their development. An ambivalence toward the three-dimensional aspect of the building comes through, a seeming fear that too much sculptural development will be seen as capitulation to the enemy (formerly the histrionic shapemaking of Paul Rudolph, now the invading blobmeisters). The Mannerist pilasters that skid across the facade of their celebrated Sainsbury Wing of the National Gallery in London just don't sweep you off your feet the way real Mannerism does. One of Venturi's sketches stopped me in my tracks,

Kimono rug for V'soske, 1989–93.



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CIRCLE 39 ON INQUIRY CARD

though. It is of a lone column outlined in black felt marker against a scribbled red Miesian grid. This became the Charles P. Stevenson, Jr., Library at Bard College, and that lone column somehow had a poignancy that never came through in the finished building. So my admittedly hubristic advice for Robert Venturi and Denise Scott Brown is to succumb to the curves and the cantilevers, or at least go more gutsily for Baroque.

I doubt they'll take my advice. They know that owners want cheap boxes, and, as the partners have frequently pointed out, architects continue to ignore the possibilities in iconography, popular culture, and symbolism. In regularly taking their colleagues to task for these failings, the partners have assumed something of a moral high ground. But here they lie stranded as the currents of theory have flowed elsewhere.

People who promote theories tend to build buildings no one can occupy. This cannot be said of VSBA, which has loyal clients, especially among prominent universities, precisely because of Scott Brown's sensitive planning (see the gorgeous University of Michigan analysis) and the graphic brilliance Venturi has always been able to deploy. Applied to the facade of a 1988 hotel for Disney in Paris, for example, is an extraordinary Pop Art explosion—a Las Vegas–derived sign that radiates the childlike joy of a brightly colored toy. (It was attached, however, to a V-shaped structure that proclaimed its budget-driven banality perhaps too overtly for the Imagineers' comfort. It was not built.) The show joyfully celebrates the sketches, collages, and other graphics used by the firm. (Many look far more glorious in the original than they ever looked published.) Even the computer has been deployed to brilliant and original effect.

Curatorially impaired

On view are many projects that defined turning points for the firm and for architecture: the early beach houses, the National Collegiate Football Hall of Fame, the Yale University Mathematics Building proposal, Gordon Wu Hall at Princeton, the State Mosque in Baghdad. The plurality of style and approach that makes ours an unusually rich era of architectural innovation was to a great degree unleashed by Venturi's and Scott Brown's critical acuity. But their influential role is hard to sort out in this exhibition. It's organized like a firm brochure (by building type) rather than chronologically or thematically. How do we understand the firm's contribution except by some discussion of the storms of controversy their views have often aroused? The ultra-respectful exhibit and catalog, as well as the dry gallery presentation, suggest an almost placid career trajectory. The arrangement of objects and the lack of information on wall cards (many are undated) obscure the progression of design intent even when multiple versions of projects are shown.

The presentation of the firm's decorative arts adds a livelier note, suggesting that VSBA could give Michael Graves and Martha Stewart a run for their money in the discount-chain housewares department. (Don't miss the gift shop, including the light-up "I am a monument" baseball cap.) These pieces are emblematic of the intriguing tightrope the partners have always walked: about but never of popular culture. They teeter; we gasp; they still have the power to amaze.

James S. Russell, AIA

Sheraton chair for Knoll, 1978–84.

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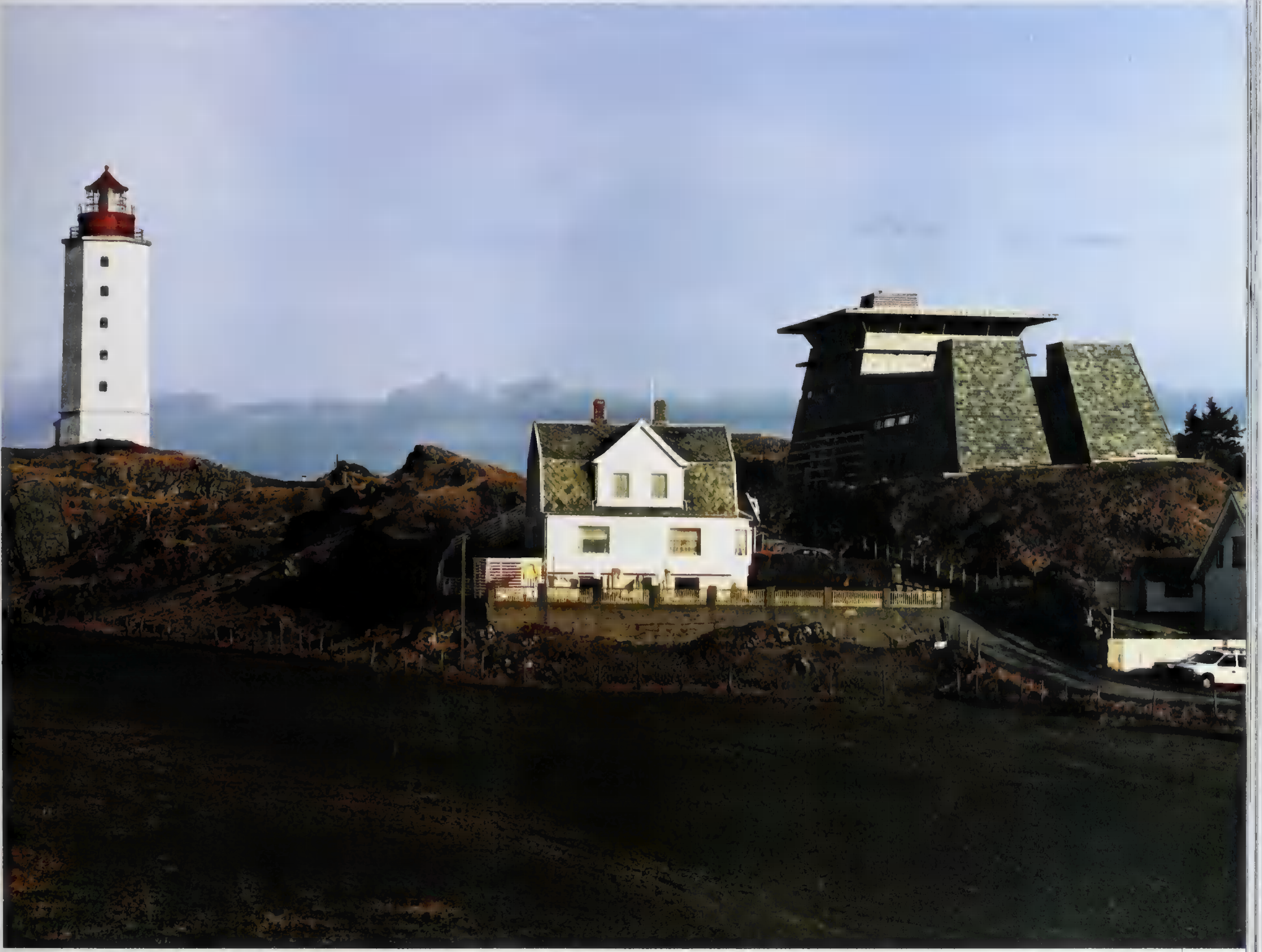
CIRCLE 41 ON INQUIRY CARD

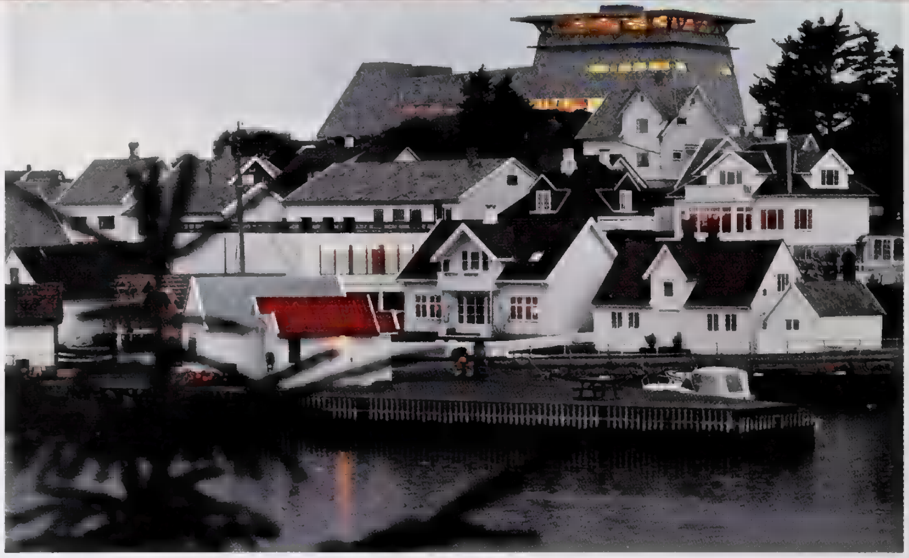


By Jane F. Kolleeny

Tranquil island hosts Norse-like nautical pilot station

The Norwegian coastline is marked by surf beaches, sheer rocky shorelines, spectacular fjords, and over 3.5 million islands. Set against such remarkable contrasts in beauty are the 365 largely uninhabited islands that make up Kvitsoy, located off the west coast of Norway, near the city of Stavanger. On one of only three inhabited islands in the group, a rustic fishing village, also named Kvitsoy, is home to the Coastal Traffic Center, a fortresslike structure designed by Jarmund Vigsnaes Architects, of Oslo. The traffic center guides ships in the area and controls the nautical traffic using eight radar sites located along the coast.

The project was the result of an invited competition in 1997 and was completed in 2000. A tiled slate "coat" and additions in length and height cover an existing 1980s white-boarded pilot station, still visible behind the new structure. There is an interplay between the existing structure and the Viking-like shield that covers it, anchoring it firmly in the rich history of the area.

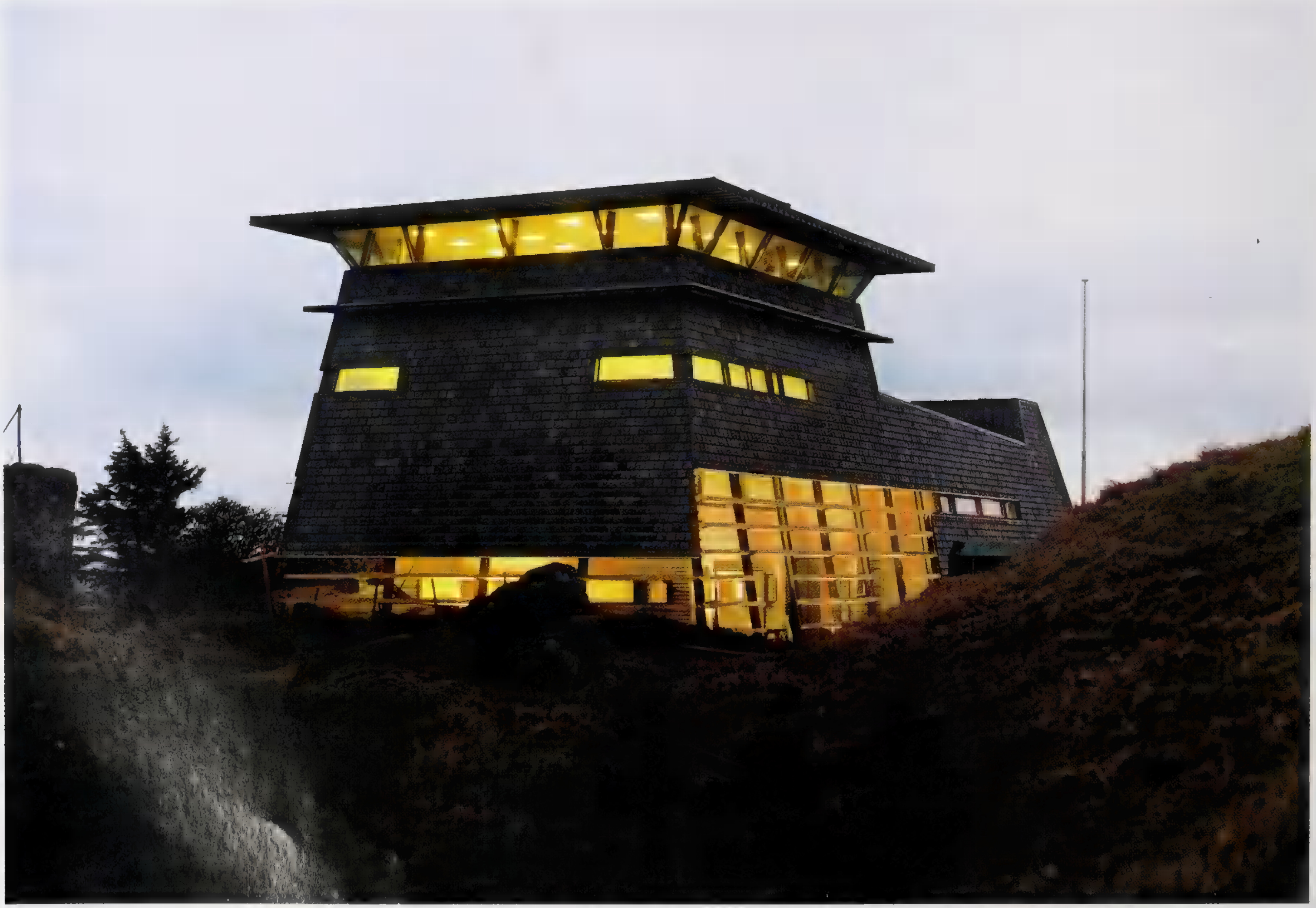


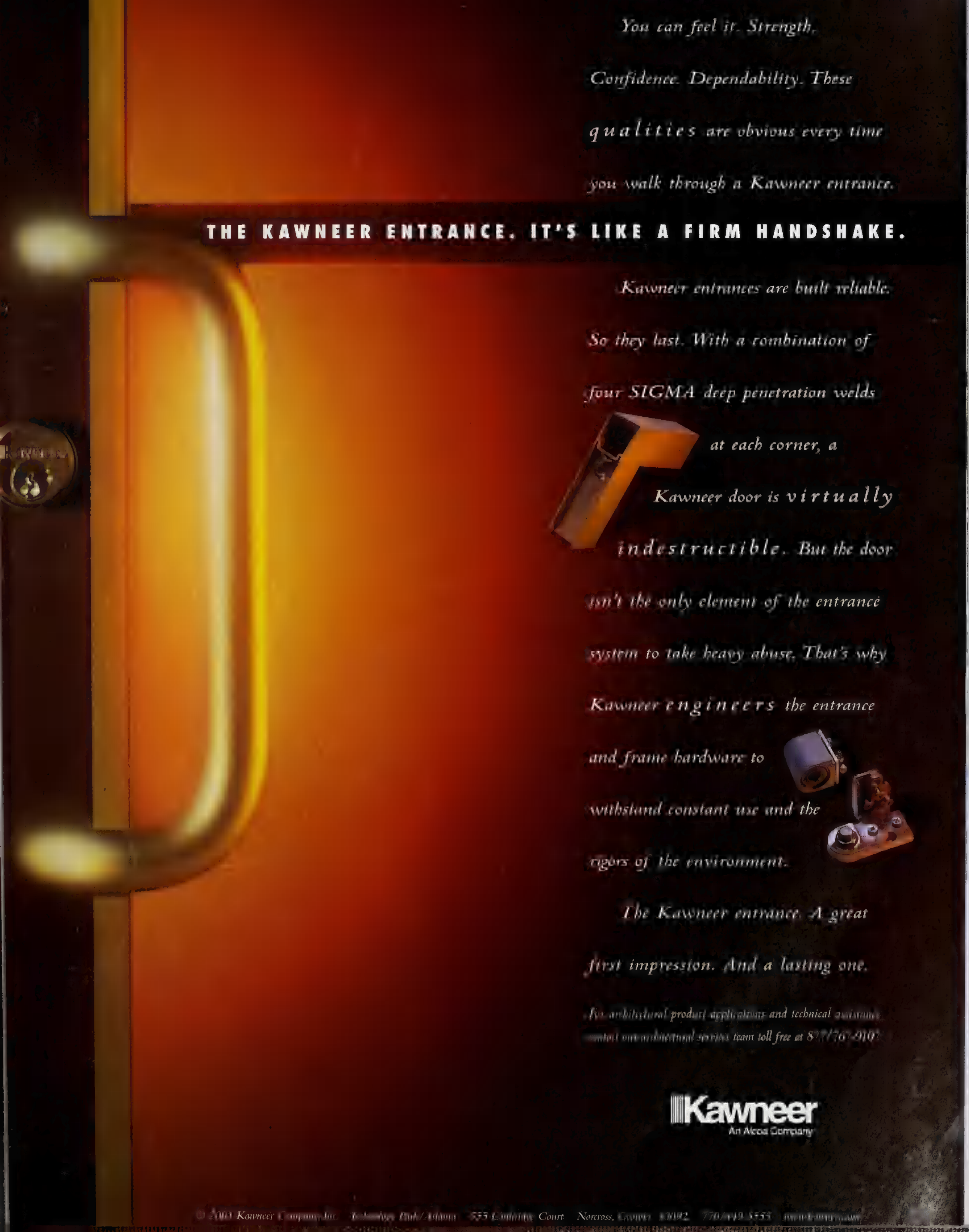
The ground floor comprises sleeping quarters, wardrobes, and a canteen. Offices with meeting rooms are organized on the first and second floors. Additional sleeping quarters, with a living room for employees on duty, are located in the first-floor addition, together with technical facilities. There is a control room on the third floor with 360-degree views of the breathtaking coastal panorama. A roof terrace for visitors sits atop the structure, with external access from the south.

The expansion results in a more efficient use of space, with minimal site interference. The sculpted volume closely integrates the structure with the topography of the island, the dramatic rocky coastline and crevices, the nearby lighthouse, and the quaint architecture of the fishing village.

"Our wish was that the result would convey ambiguity, uncertainty—perhaps doubt is a better word—about the building," says principal designer Einar Jarmund. "Our primary goal was to establish a multitude of themes in the final building, so that it is at once part of the landscape, part ship, and part reference to coastal objects. This includes the lighthouse, the beacons, and the roofscapes of nearby buildings." ■

Kvitsoy boasts a wealth of attractions, including Viking-age historic sites and a lighthouse. The Coastal Traffic Center stands like a wary parent in the background of the sleepy fishing village.





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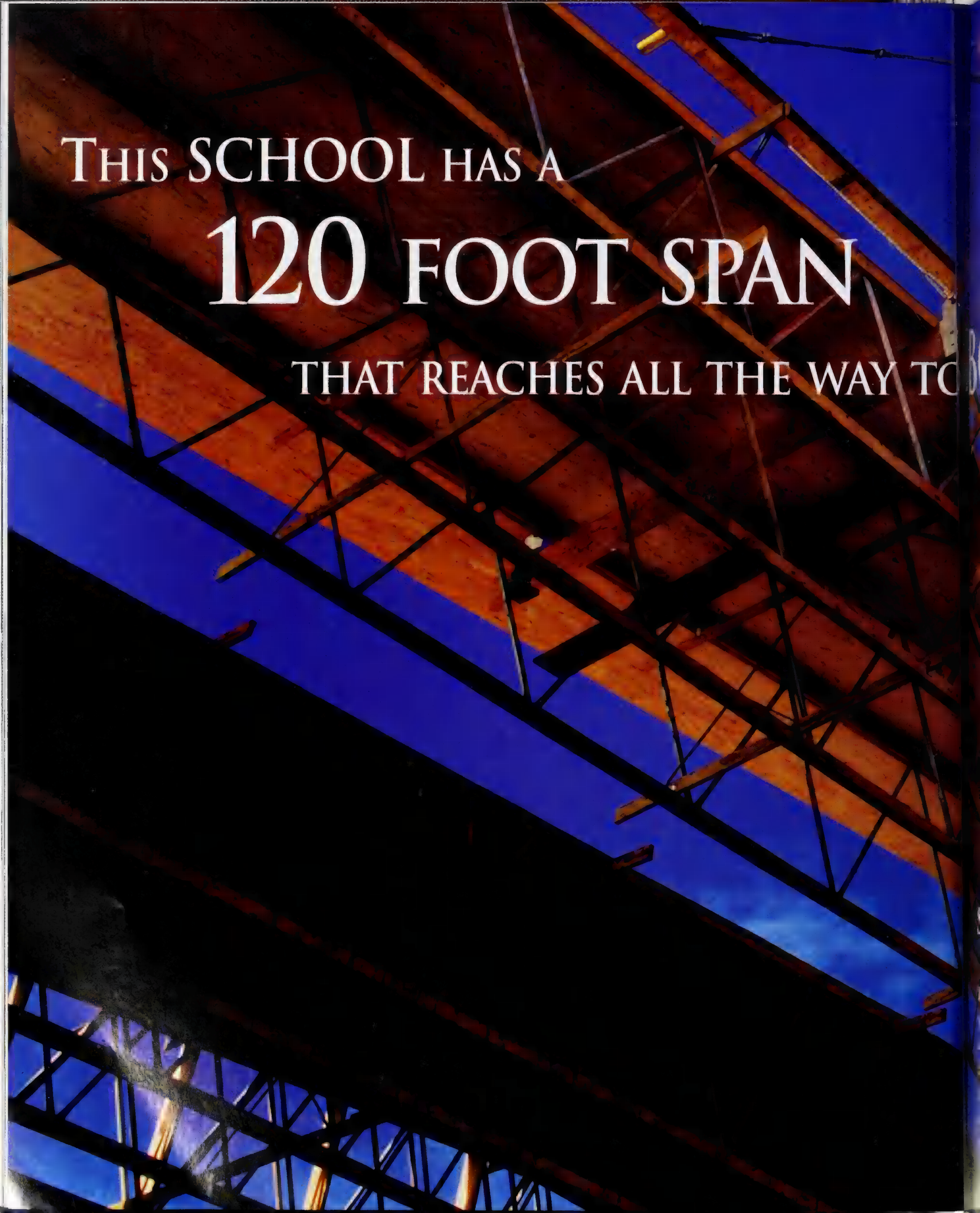
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CIRCLE 42 ON INQUIRY CARD

up top

Scandinavia's modernist architectural identity is not so monolithic

By Thomas Mellins

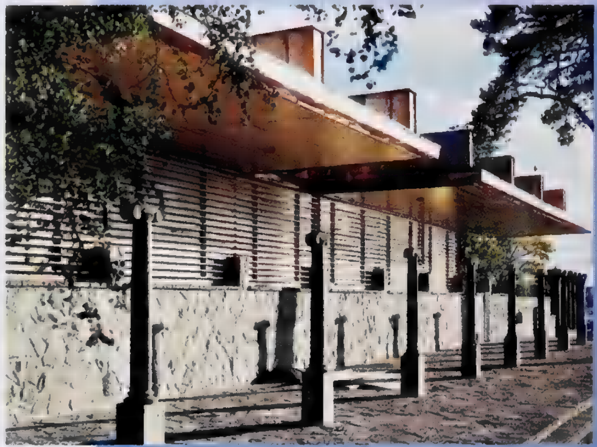
Philip Johnson and Henry-Russell Hitchcock may have envisioned architectural Modernism as an "international style," but in Scandinavia, it has always been firmly rooted in a sense of place. While the Scandinavians did not single-handedly invent Modern architecture, nobody does it better. No one has more convincingly shown that Modern architecture can embody enlightened social policy, or practically demonstrated that it can provide physical comfort, even in a harsh natural environment. Perhaps most strikingly, no one has done more than the Scandinavians to popularize Modern architecture throughout the world. "Scandinavian Modern" instantly conjures up a "look," even for people who cannot name a single Scandinavian architect. Indeed, throughout the 20th century, in the hands of Denmark's Arne Jacobsen and Jørn Utzon, Sweden's Erik Gunnar Asplund, and perhaps most profoundly, Finland's Eliel Saarinen and Alvar Aalto, the emerging language of Modernism was delivered in a voice with a character all its own—one that was at once quiet and impeccably enunciated. And the early Scandinavian Modernists displayed a genius for transforming the quotidian into visual poetry. In general, they eschewed the monumental in favor of what Eric Messerschmidt, director of international affairs and communications at the Dansk Arkitektur Center in Copenhagen, has called a "focus on the architectural settings of daily existence." Because of this, he adds, "public buildings and housing have traditionally been the preferred projects, while commercial projects have been considered by many architects not to be fully 'proper' work."

So powerful and well known is the Scandinavian Modernist legacy that today the region's architects are at risk of being merely watered-down imitators, unable to establish their own point of view. Yet, the quality of contemporary Scandinavian architecture remains unquestionably high. A few architects are famous: Norway's Sverre Fehn was awarded the Pritzker Architecture Prize in 1997, and the work of both Sweden's Johan Celsing and Denmark's Henning Larsen has been seen on the pages of architecture magazines around the world. The rest, a cavalcade of young, talented architects, are producing excellent work, yet only people very much in the know can name them. William Morgan, professor of architecture at Roger Williams University and editor of *Heikkinen & Komonen* (Monacelli Press, 2000), suggests that this may be the case because Scandinavian architects tend "not to shout." Their work, he further notes, "is not in your face like some contemporary Dutch architecture." Indeed, in this way, they keep faith with their progenitors.

Although much of the current work is firmly grounded in the tenets and traditions of Scandinavian Modernism, it is now being created within a political and cultural context that has changed radically since the fall of the Soviet Union.

(continued on page 78)

Thomas Mellins, an architectural historian, cowrote New York 1880, New York 1930, *and* New York 1960.



Johan Celsing's Art Gallery at Millesgården in Stockholm emerges as a sensitive interplay between old and new.

PHOTOGRAPHY: © ÅKE E:SON LINDMAN

down under

Australia's brand of Modernism is rooted in the local landscape

By Clifford A. Pearson

Architecture in Australia today is an intriguing balancing act, set in motion by changing perceptions of the country's place in the world and opposing responses to the natural environment.

Seen from America or Europe, Australia is a distant shore. Its isolation from the Old World, of course, is what prompted the English government to ship the first group of 750 convicts to New South Wales in 1788. But the telegraph, air travel, and now the Internet have changed our notions of distance, so that Melbourne and Sydney no longer seem so far removed from New York or London.

National Environment Centre in Albury, New South Wales, joins a wave of green designs.

Once an outpost of the British empire, Australia absorbed waves of southern and eastern European immigrants through much of the 20th century and is now discovering that its proximity to Asia and its growing population with Asian roots can be assets. Spend a few days eating in any of the country's major cities and you'll discover the polyglot sources of ingredients and techniques shaping modern Australian cuisine. The same is true with its architecture.

"Australians have always seen themselves as being outside the centers of power," explains Graham Jahn, a Sydney architect who is currently the president of the Royal Australian Institute of Architects. In previous centuries, that meant being the last to receive a new style or influence. In an age when drawings and digital images can skip from Melbourne, Florida, to Melbourne, Victoria, in less time than it takes to turn a page, this distance is more psychological than temporal. Today, being on the periphery of power allows Australian architects to filter and alter foreign influences so they have a particularly local flavor. As a result, modernism Down Under is tempered by a mostly benign climate and a laid-back culture that doesn't let anyone take himself or herself too seriously. The strident aspects of modernism found elsewhere are replaced by a more easygoing sensibility that takes advantage of local materials and informal lifestyles. So houses by Glenn Murcutt, Andresen O'Gorman [APRIL 1999, page 138], Sean Godsell [OCTOBER 2000, page 208], and other Australian architects employ the forms and abstract language of modernism but soften them with screens, louvers, natural materials, and outdoor spaces. The houses are often boxes, but much more permeable, more open to the outdoors than their European cousins.

A streak of independence

Australia's distance from European sources also provides its architects with "a freedom from conservative attitudes and entrenched historicism," says Jahn. And the country's history as a new frontier has encouraged a strong streak of independent thinking and identification with the pioneer, the person who wanders off the beaten track. "There's a strong sense of the individual in Australian culture," states Romaldo Giurgola, FAIA, who has lived and practiced in Australia

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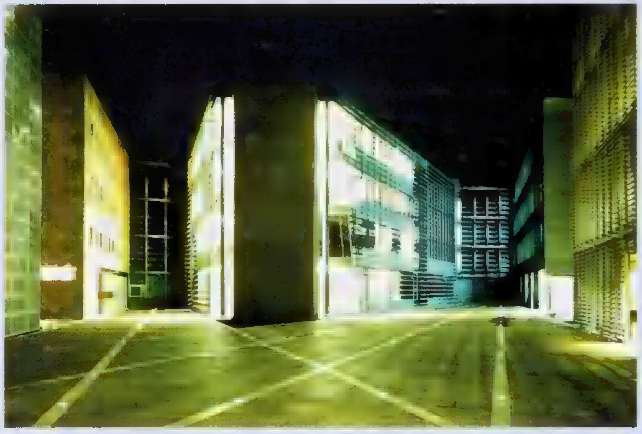

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Three of the five Nordic embassies in Berlin include the Norwegian Embassy (1), by Snøhetta, of Oslo, Norway; the Royal Danish Embassy (2), by 3xNeilsen of Copenhagen, Denmark; and the Chancellery of the Royal Swedish Embassy (3), by Wingårdh Arkitektkontor, of Göteborg and Stockholm, Sweden.

UP TOP *continued from page 76*

Economic globalization means, on the one hand, we increasingly wear the same fashions, watch the same television programs and movies, and idolize the same pop stars. On the other hand, globalization has sparked ethnic and nationalist resurgence; groups that once appeared seamlessly integrated into the international community have raised their voices.

In Scandinavia, national distinctions, as well as a sense of competition between the constituent countries, have intensified. Many outside observers still mistakenly view the region as more cohesive and less in ferment than it is. Far from being the single nation that some 19th-century statesmen imagined it would become, Scandinavia is not even fully represented within the European Union: Norway and Iceland have refused to participate, Denmark and Sweden joined with great reluctance, and only Finland easily embraced it.

Globalism and particularity

The contradictory effects of globalism help pose the principal question now facing Scandinavian architects: What happens to a sensibility and tradition, so central to the 20th-century architectural canon, in the face of dramatically altered 21st-century economic and political realities? Looking back in time across the 20th century, during which each Scandinavian nation transformed itself into a modern welfare society, helps put the region's current architectural activity in perspective. Denmark, a trading nation with 4,000 small islands, retained its decentralized economic structure in the face of increased industrialization. Its large number of urban craftsmen, who tended to focus on detail, maintained significant control over building activity. In Sweden, a comparatively large industrialized economy, unimpeded by World War II because of the country's neutrality, rested on the shoulders of a few corporate giants: Saab, Volvo, and Electrolux. The Swedish building industry was similarly structured, and the concentration of power among a select number of companies was accompanied by a diminution of the architect's power and influence. Today, the Swedish architect is to a large degree a consultant to the building industry. In Norway, despite a high degree of wealth brought about by the oil boom of the 1970s and enjoyed by both the public and private sectors, the building industry and the architectural community remained small, and there have been more opportunities for collaboration among architects than in other countries. Iceland, a part of Denmark until 1947, has continued to rely heavily on rurally derived, traditional architectural forms and building types. The nationwide absence of an architecture school, however, has resulted in all Icelandic architects being educated abroad, and, consequently, in a surprisingly sophisticated and internationally informed output.

What role does the rich architectural tradition of the recent Scandinavian past exert today? Messerschmidt argues that whereas in the 1980s Scandinavian Modernism was relegated to discussions of *(continued on page 80)*

DOWN UNDER *continued from page 77*

since completing the country's Parliament House in Canberra in 1988. Such an attitude helps explain both Ashton Raggatt McDougall's wildly nonconformist renovation of historic Storey Hall in Melbourne [NOVEMBER 2000, page 106] and the bush architecture of Gabriel Poole in Queensland, Ken Latona in Tasmania (see article, page 104), and Troppo in the Northern Territory.

"What distinguishes Australian architecture is a combination of a unique cultural history of independence and larrikinism [rowdiness] mixed with a strong and characterful landscape," say Lindsay and Kerry Clare, a husband-and-wife team of architects who started their careers in Queensland, then worked for two years with the government architect of New South Wales (the state that includes Sydney). Although not exactly rowdy, the Clares' design for the National Environment Centre, done with the NSW government architect, exhibits the kind of rugged engagement with its setting that Australians admire. It also serves as a prototype of green design.

In a country blessed with scenic coastlines and remarkable physical beauty, it's not surprising that the relationship to the land has been a critical factor in architecture's development and expression. Chris Johnson, the government architect of New South Wales, explains this relationship in the book *Australian Architecture Now* (coauthored with Davina Jackson). Johnson states, "Two opposing concepts guided Australian architecture towards the end of the 20th century. One led to structures that stand upon and hover above the ground to show separation and superiority. The other generated buildings that come from and merge with their contexts. Both approaches continue the eternal struggle between humans and the land. The first idea leads to architecture that, like a bridge, touches the earth lightly and displays clean, modern technology in simple and mostly rectangular forms oriented to the sun. The second is represented by buildings that remould the earth in flowing forms, displaying the craftsmanship of local materials."

Touching the earth lightly is most clearly identified with Murcutt, whose Sydney-based practice accepts only a limited number of commissions each year. His buildings, especially his houses, usually rest on columns or piers instead of solid foundations, employ traditional methods for capturing daylight and breezes, and use materials found in vernacular buildings. A younger generation of architects that includes Peter Stutchbury, Latona, the Clares, and Troppo has absorbed Murcutt's ethic and is busy applying it to projects around the country.

A project that tries to combine the light touch and the more solid and grounded approach that Johnson mentions is the C House (1) on the outskirts of Brisbane in Queensland. Designed by the firm Donovan Hill, the house sets a series of wood-and-glass pavilions atop a cascading base of poured-concrete walls, courts, and terraces. Sixteen flights of stairs lead up, around, and about the sprawling residence, built for a bachelor. According to Jahn, Donovan Hill—along with Neil Durbach in Sydney—brings "a

(continued on page 82)

Donovan Hill's C House (1) in Brisbane places a series of pavilions on top of an artificial landscape of concrete terraces. The Scientia at the University of New South Wales (2), by MGT (formerly Mitchell/Giurgola & Thorp), exemplifies a kind of expressive Australian individualism that Romaldo Giurgola admires.

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down under

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UP TOP *continued from page 78*

history in Denmark, now its principles are treated as part of the ongoing discourse. In Norway, some architects reputedly have stated that using wood, once a hallmark of the regional sensibility, can seem “kitsch.” As Bjorn Larsen, editor-in-chief of the Norwegian magazine *Byggekunst*, put it, “Nostalgia for Modernism can be just as nostalgic as other forms of nostalgia.” Rasmus Wærn, an editor at the Swedish journal *Arkitektur*, points out that Sweden’s connection to its own Modernist past is somewhat different from that of the rest of Scandinavia. Sweden, he contends, had a “stronger Postmodern reaction,” linked to its own “crisis of the welfare state,” and subsequently the profession suffered from a collective loss of confidence. Pointing to the highly positive response that Swedish designers received recently at an international exposition in Milan, as well as to the strength of the work itself, however, Wærn hypothesizes that the time may have come for young Swedish architects and designers.

Competition for the Alvaristi

In Finland, the “scene” was for decades dominated by Alvar Aalto. His image even appears on paper currency. William Morgan asserts that, following Aalto’s death in 1976, “there was more room for people who were not ‘Alvaristi.’” Harri Hautajärvi, editor-in-chief of the journal *ark-Arkkitehti*, notes, “While it is easy for young architects anywhere to feel stymied by a lack of compelling projects, luckily we have many architectural competitions in Finland—many of which are open to young architects and students.” Despite the significant differences between the Scandinavian countries, one fascinating architectural complex, completed in 1999 and located, ironically, not in Scandinavia, but in Berlin, shows that cooperation does not necessitate a loss of cultural identity.

The building group, wrapped by an undulating, four-story-high copper wall, contains five separate buildings, each housing a national embassy. Stressing the intrinsically multinational dimension of the project, an Austrian-Finnish firm, Berger & Parkkinen, was responsible for the overall concept, including the inventive site plan, as well as the design of a common building serving all five nations. The stylistically referential Danish Embassy was designed by the firm of 3xNielsen, the sleek Swedish Embassy by Gert Wingårdh, the dramatically colored Icelandic Embassy by Pálmar Kristmundsson, and the Finnish Embassy (not surprisingly, evocative of Aalto’s work) by VIIVA Arkkitehtuuri Oy. The Norwegian Embassy was designed by Snøhetta, a firm whose main office is located in Oslo, but whose three principals—Craig Dykers, Cristoph Kapeller, and Kjetil Thorsen—hail from the U.S., Austria, and Norway, respectively. Seen as a whole, the embassies powerfully reflect the vitality of contemporary Scandinavian architecture. Whether the complex’s insistent, if somewhat strained, maintenance of distinctive national architectural identities within an overarching regional sensibility will find further expression in Scandinavian architecture remains to be seen. ■

Additional Nordic embassies in Berlin include the Icelandic Embassy (4), by Pálmar Kristmundsson of Reykjavík, Iceland, and the Finnish Embassy (5), by VIIVA Arkkitehtuuri Oy of Helsinki, Finland.

PHOTOGRAPHY: © CHRISTIAN RICHTERS (4); JUSSI TIAINEN (5)

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DOWN UNDER *continued from page 79*

molded, tactile design approach" that is both sensual and organic.

Urban competition

For a country of just 19.2 million people, Australia has marked differences in architectural expression from one region to another. "I doubt the utility of the term *Australian architecture*," states Leon van Schaik, deputy vice chancellor of the Royal Melbourne Institute of Technology (RMIT) and head of the school's architecture program. "It makes more sense to think of the architecture of the city-states that form the federation of Australia. The tradition and the discourse in the different cities are shaped strongly by the intellectual history of each city and by the very different climates and social origins," adds van Schaik.

While Sydney is blessed with its spectacular natural setting and a few landmark structures, such as the Harbor Bridge and Jørn Utzon's Opera House, Melbourne has the more robust architectural community these days. Firms such as Denton Corker Marshall, Wood Marsh, and Nonda Katsilidas have given Melbourne a host of dynamic and colorful new buildings, including the Melbourne Museum [JANUARY 2001, page 70], Bourke Street Bridge, and Melbourne Terrace apartment block. At the same time, practitioners such as Godsell and John Wardle (see page 114) have contributed more subdued but elegant designs. In Sydney, classic modernism still lives, as seen in the courtyard housing units of Alex Popov, the stripped-down residences of Engelen Moore (page 108), and the apartment towers of Harry Seidler (3).

"There has always been creative tension between Sydney and Melbourne," explains Giurgola, with Sydney architecture tending to be more commercial and Melbourne's more intellectual. Giurgola sees this rivalry as a good thing, likening it to that of Florence and Venice during the Renaissance. "All of Italian art comes from provincial competition," states Giurgola.

Still close to the landscape

While Australia's head may be in Melbourne and its wallet in Sydney, its heart is probably in the bush and along the shore. Building in rugged places has given Australian architecture a strong environmental ethic and a deep respect for the land. "The language driving Australian architecture is still rooted in a sense of place," says Jahn. "The proximity of the original landscape to our cities exerts a powerful force on us. Australia is very urban statistically, but not psychologically. To us, the landscape is never really far away." ■

Suggested reading

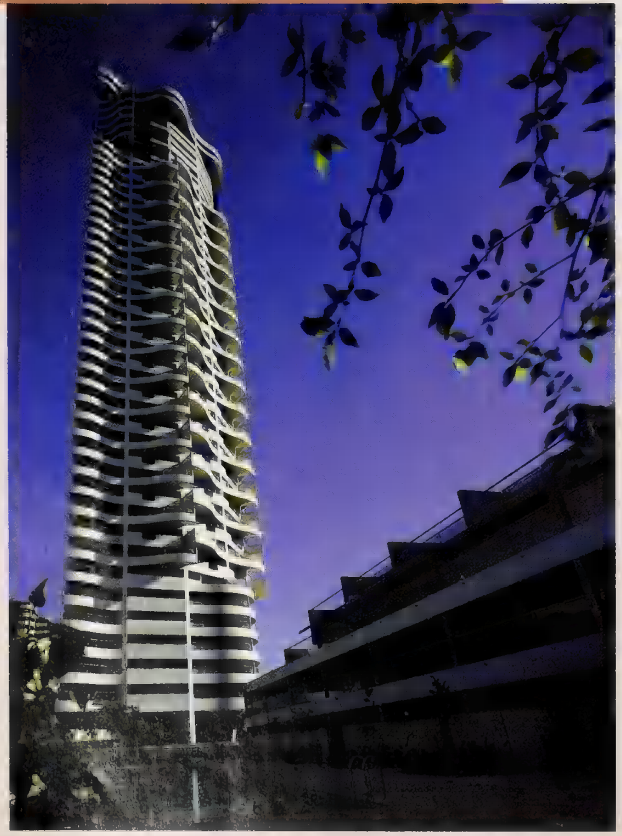
Australian Architecture Now, *by Davina Jackson and Chris Johnson. Corte Madera, Calif.: Gingko Press, 2000, 258 pages, $75.*

Local Heroes: Architects of Australia's Sunshine Coast, *by Peter Hyatt. Sydney: Craftsman House, 2001, 224 pages, $45.*

Denton Corker Marshall: Rule Playing and the Ratbag Element, *by Haig Beck and Jackie Cooper. Basel: Birkhäuser, 2000, 252 pages, $70.*

Heikkinen + Komonen, *edited by William Morgan. New York: Monacelli Press, 2000, 192 pages, $40.*

Sydney area: the Horizon by Harry Seidler (3); Grant House by Graham Jahn (4), and Peter Stutchbury's Link Building at Newcastle University (5).



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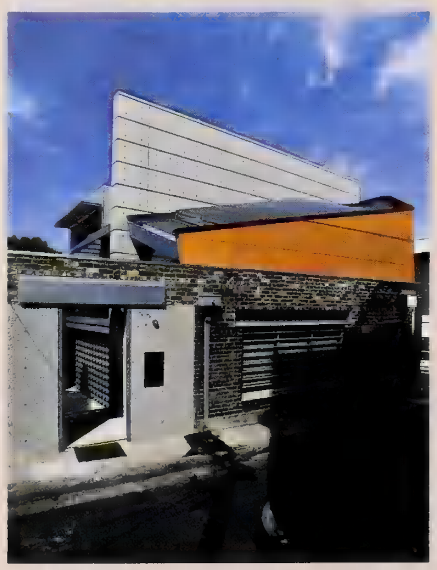

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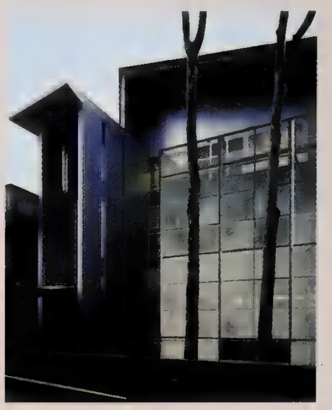

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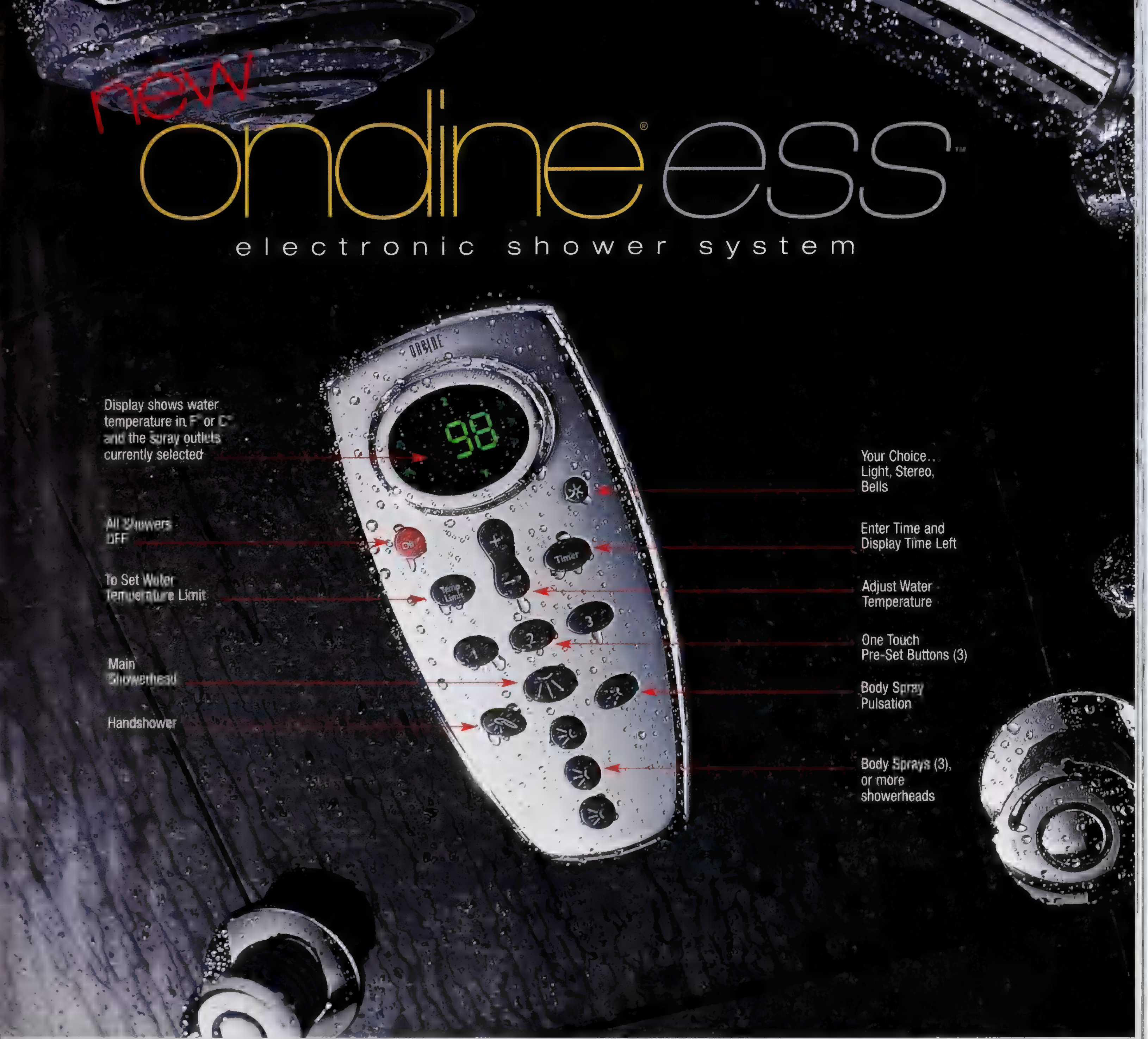
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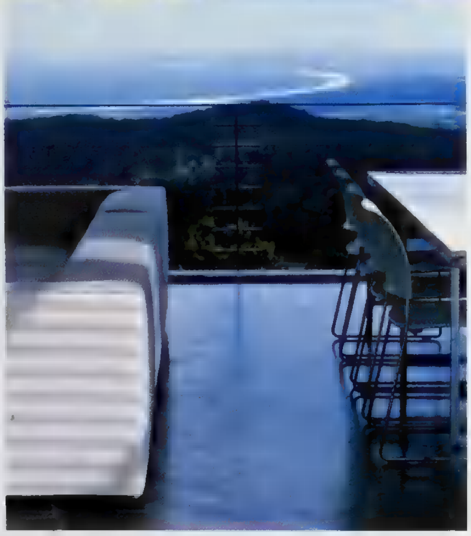
CIRCLE 45 ON INQUIRY CARD

up top in Scandinavia, modernism varies with clime and country, while in Australia, design makes a case for place down under



Two oceans, worlds apart.
Nordic Watercolor Museum, Skärhamn, Sweden (top).
Rose House, Saddleback Mountain, New South Wales, Australia (above).

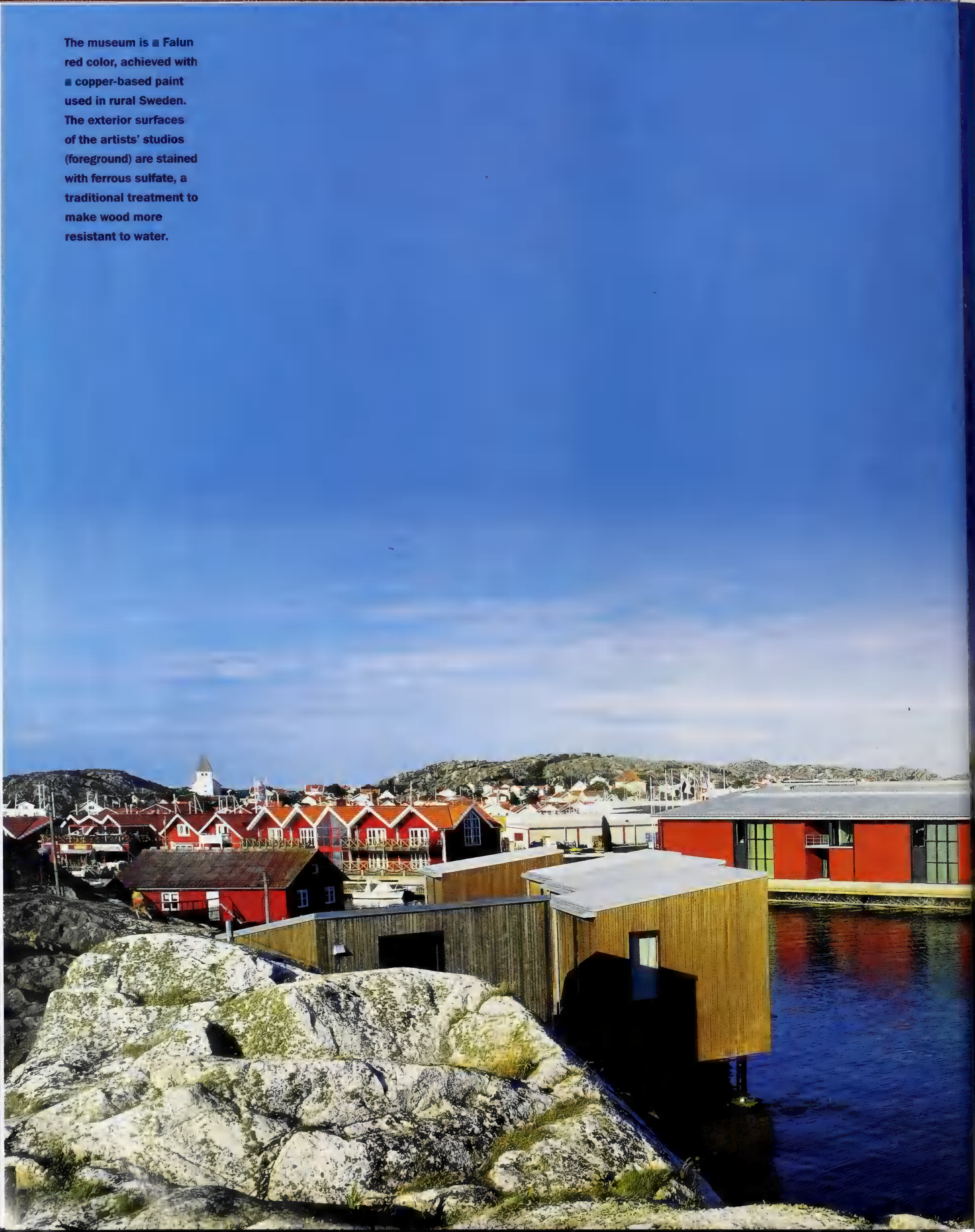
This high-speed world is shrinking. As it picks up velocity, lands formerly confined to the margins—the archipelagos, the minor continents—have joined center stage, propelled by global economic forces, mass communications, cheap transportation, and a pervasive electronic intelligence über alles. Suddenly, the periphery has leaped from backwater to mainstream, informing and feeding and energizing us. We look to the margins for ideas.

Examine these extremes, lest you doubt. Surprisingly, Scandinavia and Australia share certain similarities, including maritime cultures with urban coastal centers and landforms that luxuriate into broad uninhabited zones. Their frontiers, like our own, continue to affect the collective imagination, and the soul, of the people. While the Scandinavian tradition may be older, both Up Top and Down Under are making remarkable contributions to contemporary architecture.

For the past couple of years at RECORD, the number of powerful projects from Down Under had been mounting; we realized that something was brewing outside the Foster's lager. While we had become thirsty for more of the Murcutt school, (eco-friendly, supremely sited, up from the landscape), we noticed diverse types bubbling up, projects that spanned from cool orthodox Modernism to a kind of unnamed Postmodernist bravado.

As we prepared this issue of RECORD, our preconceptions crumbled. Up top, we peeled back the layers of an apparently cohesive Scandinavia and found five distinct nations struggling with national identity. Today they display individualistic responses to place, including scale, materials, and even construction techniques. Look at Denmark and Sweden. While the Malmö bridge now links the two and they share the same limpid summer light, the Danes have incorporated a more modest Modernism into every aspect of contemporary design, particularly their furniture and the objects of everyday life, in contrast to their Swedish cousins.

ARCHITECTURAL RECORD explores these developments. Turn the pages. Surf our site. It's the perfect summer getaway, without a single canceled flight. *Robert Ivy*



The museum is ■ Falun red color, achieved with ■ copper-based paint used in rural Sweden. The exterior surfaces of the artists' studios (foreground) are stained with ferrous sulfate, a traditional treatment to make wood more resistant to water.

Niels **Bruun** & Henrik **Corfitsen** of Denmark won a competition for the **NORDIC WATERCOLOR MUSEUM** in Sweden, and then the fun began...

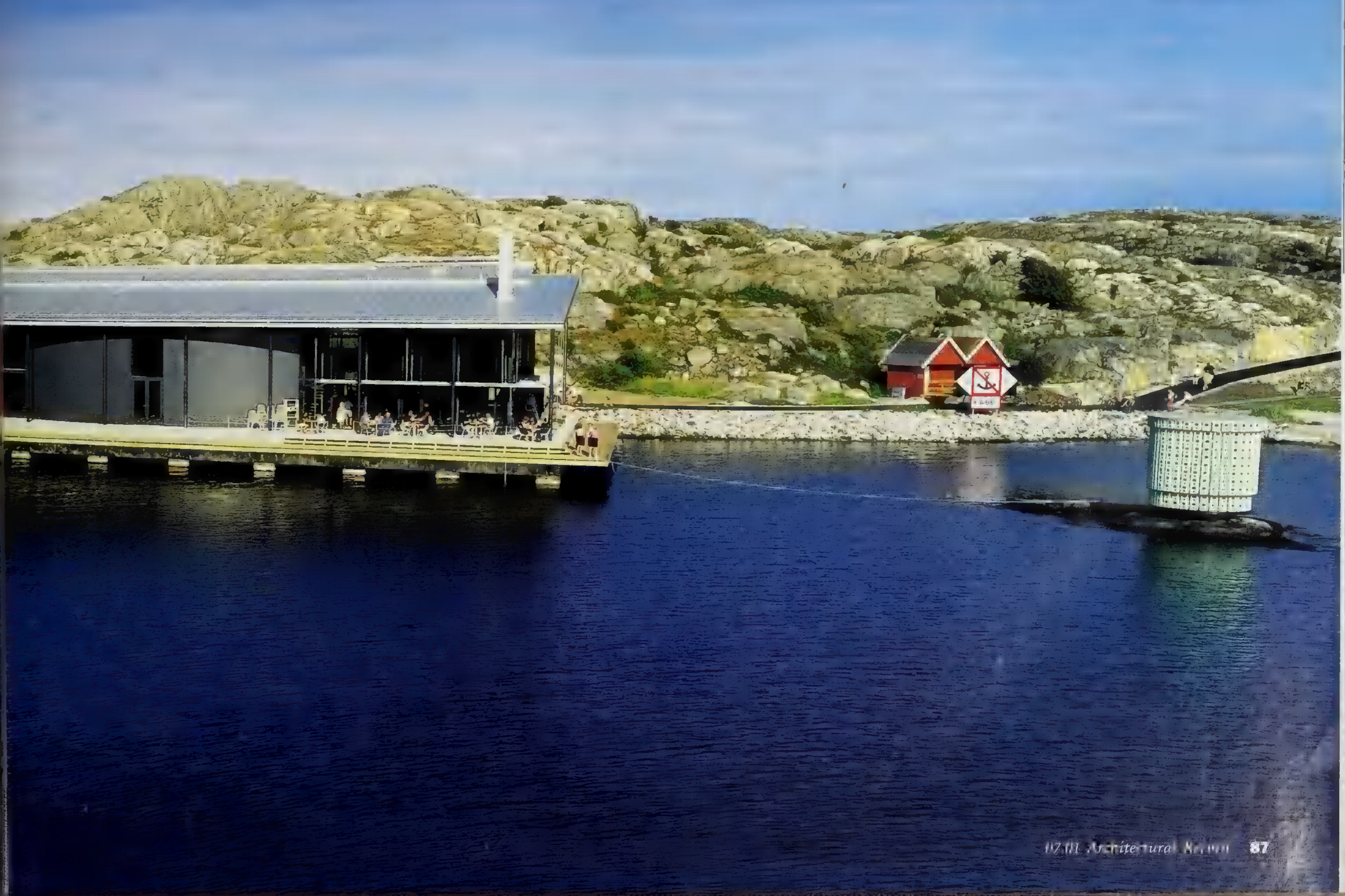
By Nicholas Adams

The hottest architectural competition to take place in Scandinavia over the past few years was the Nordic Watercolor Museum in the small Swedish town of Skärhamn, just north of Gothenburg. With 386 entrants, it was the biggest competition ever held in Scandinavia. The results brought surprise, disappointment, and controversy. Although some of the top players in Swedish architecture entered (including Gert Wingårdh), the winner was a pair of little-known Danish architects, Niels Bruun and Henrik Corfitsen, who had teamed up for the competition.

Sweden was the big loser: None of its architects placed among the prizewinners, and the Swedish chairman of the jury, Peter Ohrstedt, declared that Swedish architecture and Swedish architectural education were now in a state of crisis. And the new building, with its pronounced Danish character, has not stilled the controversy. Startlingly successful with the public, the museum has been sharply attacked by Swedish architectural commentators, who accused it of being insensitively adapted to its site, dull, and not sufficiently representative of Nordic values. A visit to Skärhamn is no idle tour to a new museum facility, but a tiptoe among the sharp-edged shards of Nordic architectural politics.

The program was ambitious. The Nordic Watercolor Society wanted not only gallery spaces for the exhibition of watercolors from the five Nordic countries, but classroom studios for teaching, as well as a room for lectures and small concerts. A visiting artist program required small residential studios, and a restaurant and gift shop were planned for the 30,000 visitors projected annually.

Nicholas Adams teaches architectural history at Vassar College and was the editor of the Journal of the Society of Architectural Historians.



Nestled in the cliffs alongside an ocean inlet and a small offshore island called Blockholmen, the new museum is a low-key wooden box with a gable roof. In deference to the site, the building sits on a concrete pad, supported on pylons, which forms a wharf over the inlet. A boardwalk allows visitors to walk along the water and reach the island without having to go into the museum.

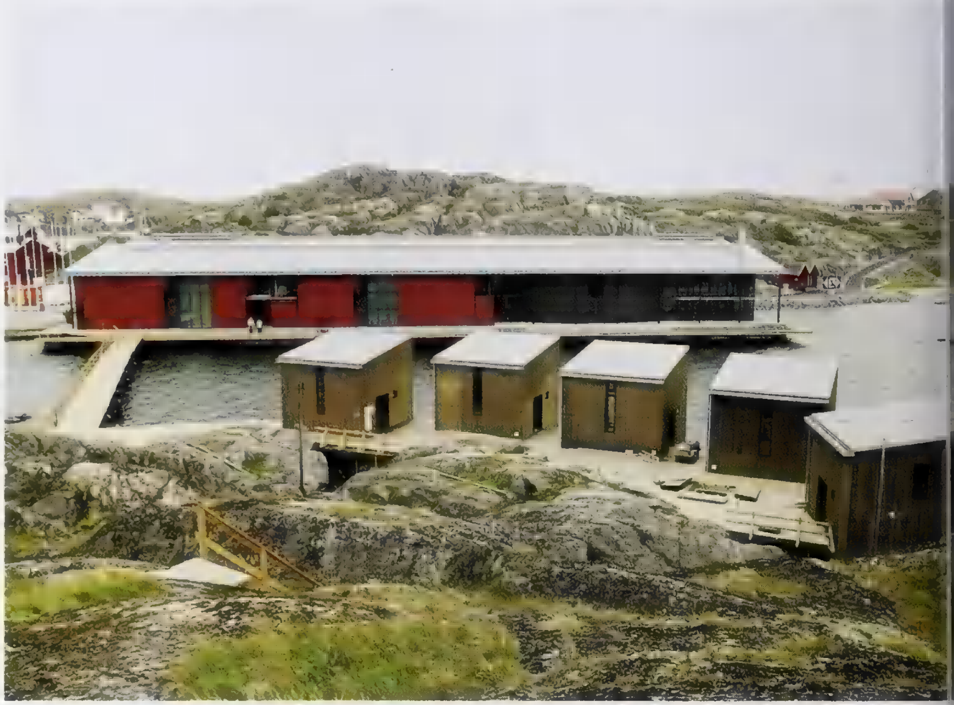
This modest exercise in the vernacular seems, at first glance, to be a maritime warehouse. The architects chose thin wood batten, either painted or left natural, and concrete, as the most dominant materials. The overall effect is dressed-down formal—in some places (such as the lecture hall) it is relatively elegant; in others (such as the galleries) spare, with a casual air that suits the seaside location. In an effort to enliven the interior of the box, the architects may have overdone it a bit. (Or, in the language of Nordic architecture, perhaps the building could have been more Danish.)

The Watercolor Museum is not a conventional exhibition hall: Bruun and Corfitsen had to fuse space for the exhibition and practice of art, and for the appreciation of nature, into a museum for enthusiastic watercolorists. Nature alone provides a surfeit of sensations; this is one of the most photogenic stretches of coastline in Sweden, particularly popular among painters, who have been coming here since the end of the 19th century. The gallery spaces effectively combine the exhibition of artworks with bold floor-to-ceiling clear-glass windows that frame views of the stony cliffs of Blockholmen and the five studios. Each view from the studio, where windows on three sides allow the proper light for painting, offers a potential artistic image. Nature beckons. This building makes the act of painting the natural next step.

The museum has been a hit—the Nordic equivalent in popularity to the Guggenheim Bilbao. In the six months since its opening, it counted about 100,000 visitors and expects 200,000–250,000 for the year. Already expansion is planned for fall 2001. The entrance will be improved with new signage, paving, and exterior lighting, which will take some of the guesswork out of the now slightly ambiguous approach. There will be new facilities for exhibition and education, and screens projecting out at right angles to the main gallery spaces will prevent the low-angled sun from entering the galleries.

As for the objections raised by Swedish critics? Some of the functional objections don't hold up. The extreme openness of the galleries is clearly a programmatic decision, however unwelcome it may be to experts in painting conservation. And though the Falun red color of the building, like a dense watercolor stain itself, doesn't please everyone, this copper-based paint is used on rural architecture throughout Sweden. As for being dull, Bruun and Corfitsen have squeezed as much life from a tight box and a tight budget (about $5.1 million) as they could. Though the site may not stand up to the unexpected invasion of visitors who clamber over Blockholmen to see the dramatic views beyond, the solution seems to be the right one, given the client's desire to respect the locale.

These critiques remind one of the discomforts of cultural collaboration, even in Scandinavia. Sweden got the building (and the new investment); Denmark got the design; the current director is from Finland. As to the question of the crisis in Swedish architecture, a special sensitivity still remains. What the competition and its result do reveal are that national traditions of building remain lively in Nordic Europe. This project, which ultimately performed an international cultural mission, taxed the Scandinavians' legendary ability to compromise. With its architecture already a focus of controversy, it will be interesting to see how well both building and mission wear in the coming years. ■



Project: *Nordic Watercolor Museum, Skärhamn, Sweden*
Owner: *Nordiska Akvarellmuseet*
Architect: *Niels Bruun and Henrik Corfitsen Arkitekter m.a.a.*
Interior designer: *Karin Nyrén*
Engineers: *Pl [illegible] AB (structural); AF-RNK (mechanical); Scandiaconsult SCC (electrical)*
Lighting: *Jan Ejhed*

Sources
Roofing: *Rheinzink*
Windows: *Schüco international*
Glass glazing: *Saint-Gobain/ Emmaboda*

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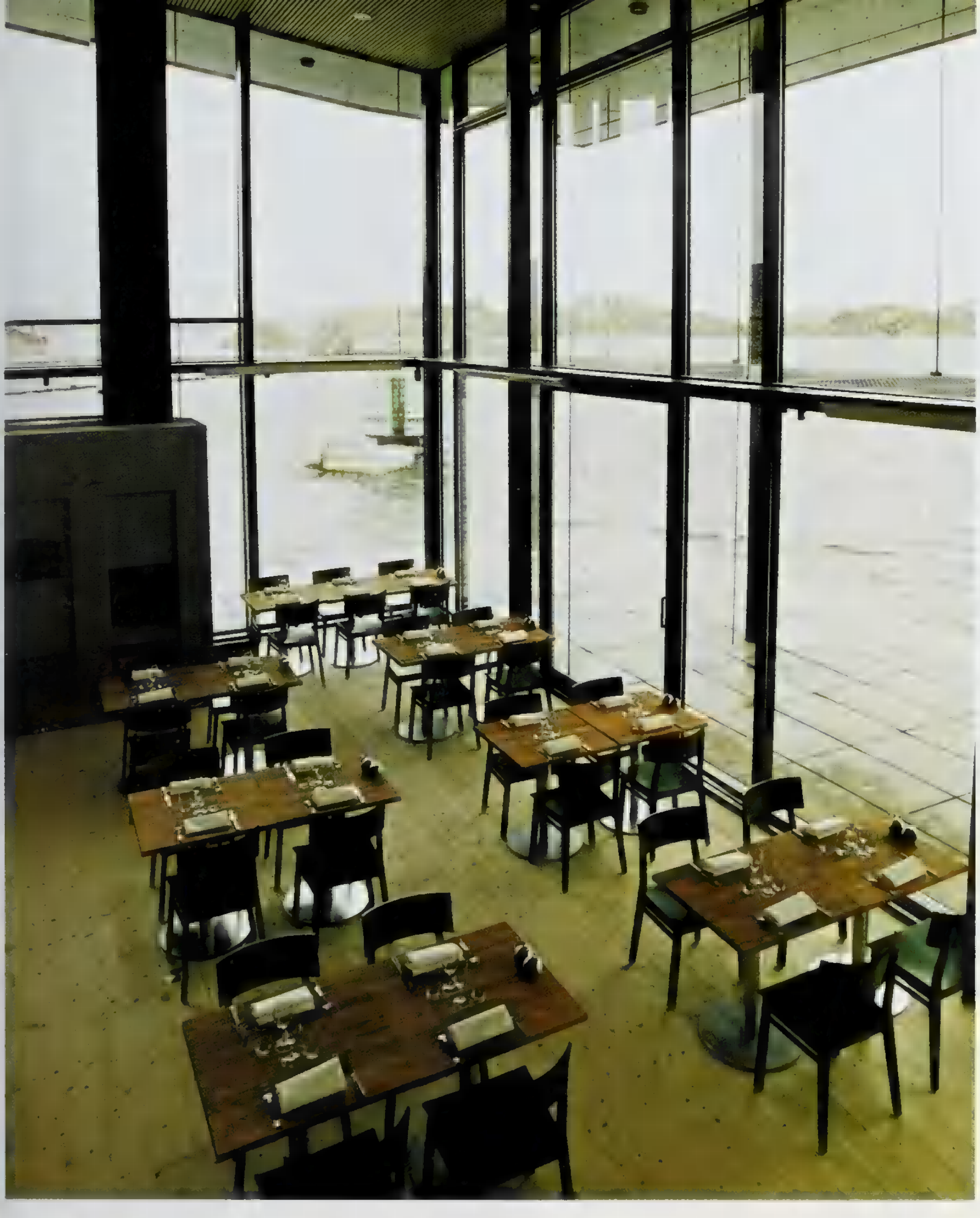
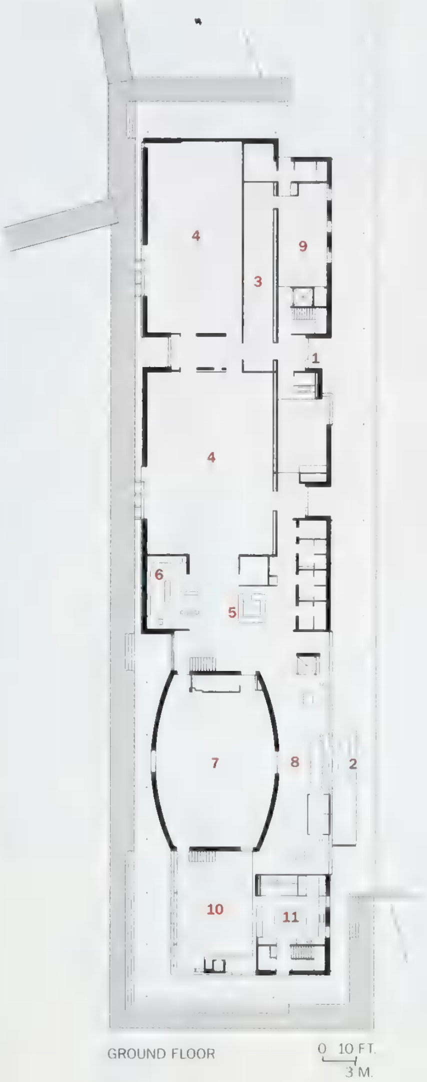
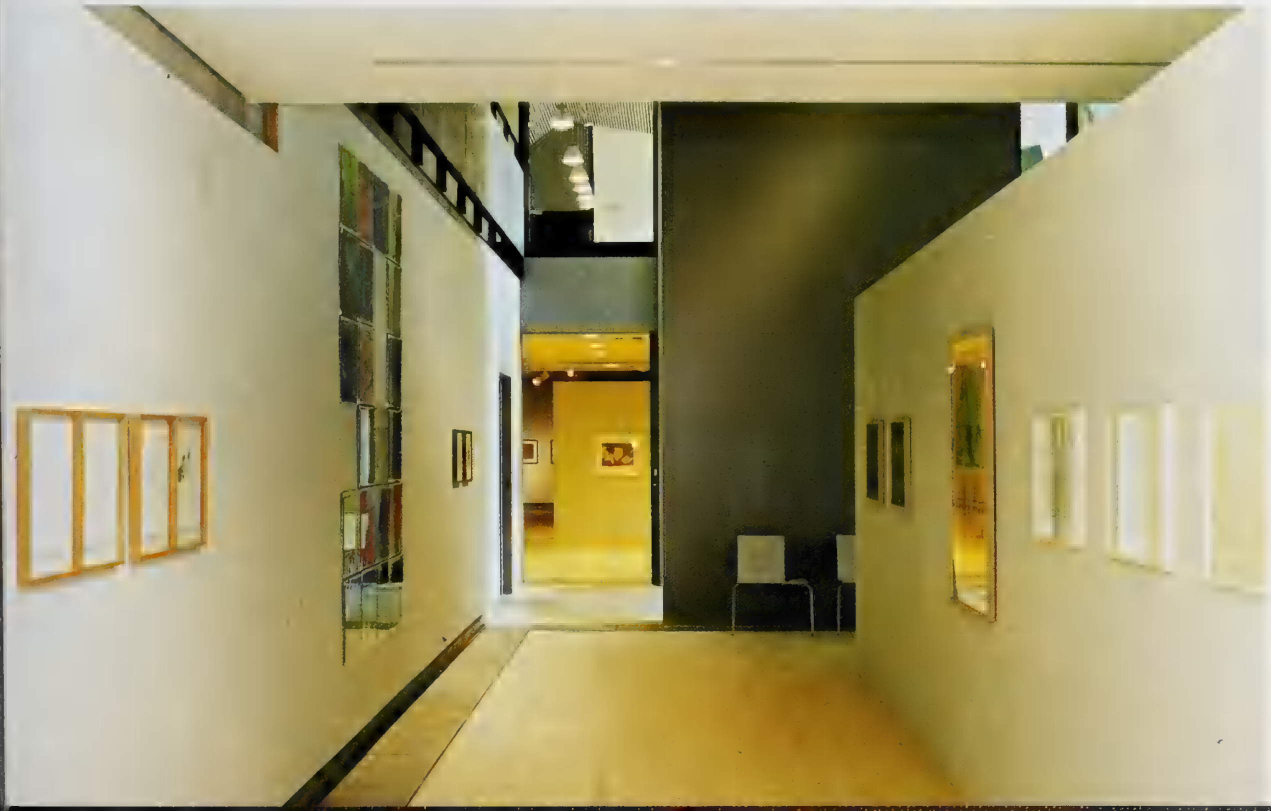
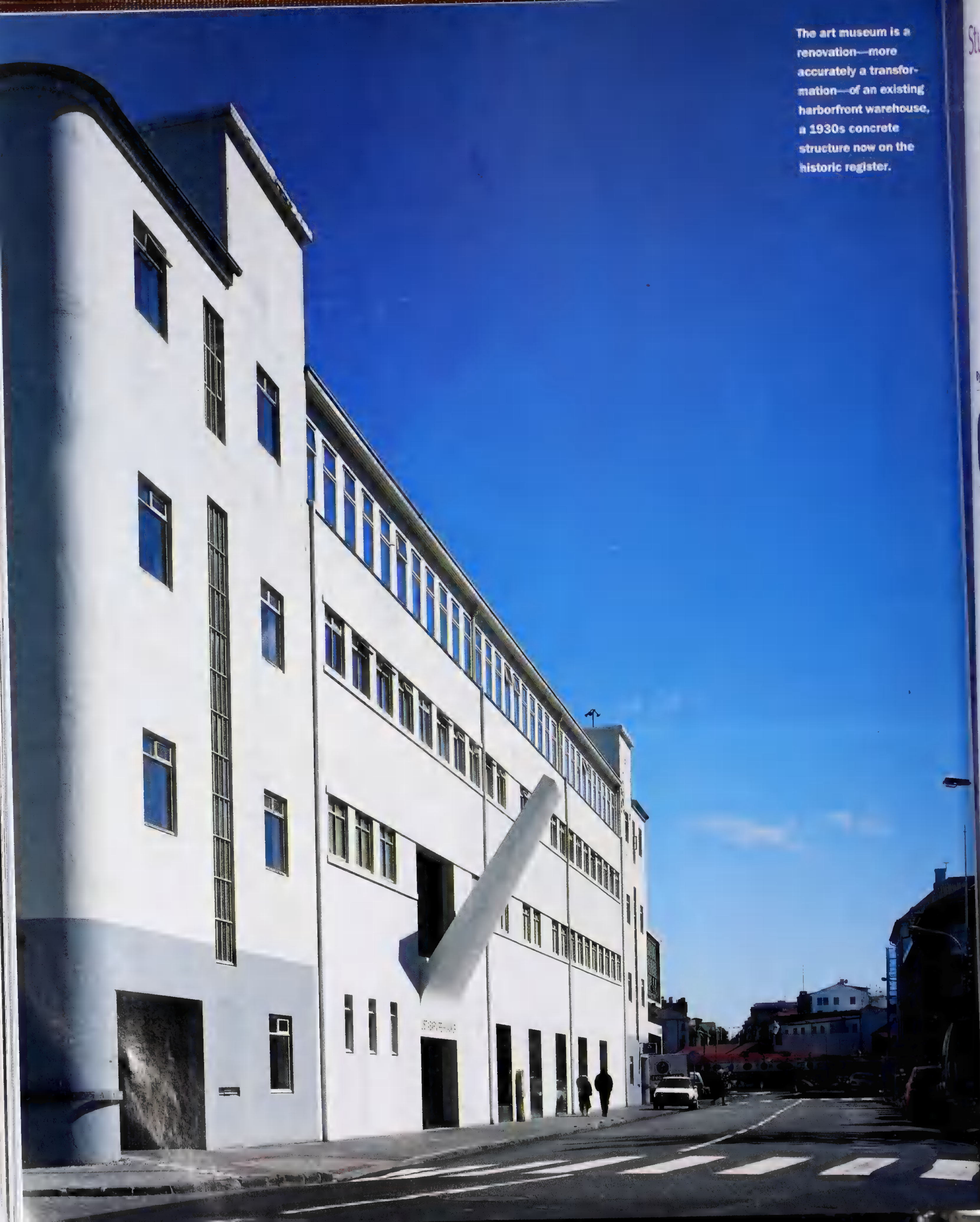




1. *Admissions entrance*
2. *Main entrance*
3. *Store*
4. *Exhibition*
5. *Reception*
6. *Boutique*
7. *Assembly hall and exhibition*
8. *Foyer*
9. *Workshop*
10. *Restaurant*
11. *Kitchen*



Inside, some of the most successful spaces, such as the cool, airy restaurant, limit one's attention to the spectacular view across the water (above). The flooring of the galleries is spruce, specially treated with soap to resist dirt and give a neutral, light reflection (bottom).



The art museum is a renovation—more accurately a transformation—of an existing harborfront warehouse, a 1930s concrete structure now on the historic register.

Studio **Granda's** inventive renovation of a 1930s building enlivens the waterfront in Iceland's **REYKJAVIK ART MUSEUM**

By Peter MacKeith

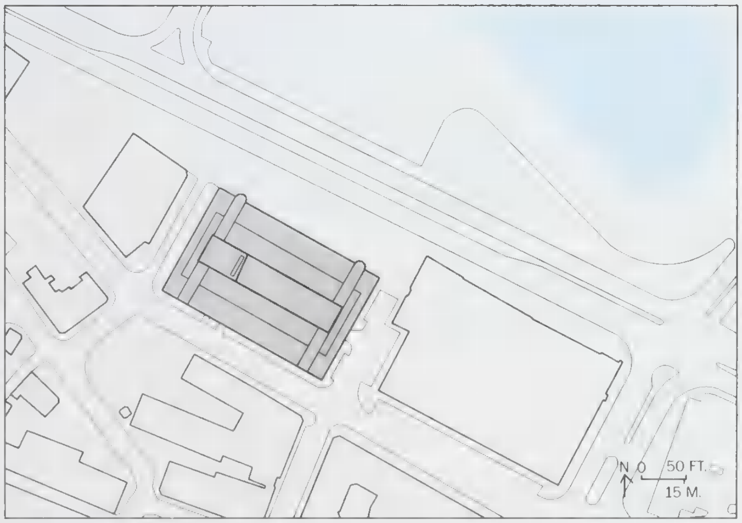
On a sunny May afternoon in Reykjavík, architect Steve Christer—who together with Margrét Hardardóttir leads the partnership of Studio Granda—energetically demonstrates the operation of a paired set of 24-foot-high steel-clad folding doors. The doors are important insertions by the architects in their new Reykjavík Art Museum, a renovated concrete warehouse on the city's harbor. Since the doors are placed on both sides of a corridor that separates a multipurpose room from a courtyard, opening them creates a continuous area for special events. This spatial advantage made for a memorable "dance" of industrial forklifts, choreographed for last year's dedication.

Studio Granda's work demonstrates an intimacy borne of well-considered siting, spatial character, and choice of materials. Finely made details are highly individual, yet possess a whiff of other architectures and cultures. The effect is surely the product of the close-knit atelier, the life collaboration of Christer and Hardardóttir, and their keen commitment to building well in Iceland.

These days Reykjavík is a European capital city whose small size belies its expanding artistic prominence. The last year has brought a wave of attention to the Icelandic pop-music scene, and, meanwhile, the city is expanding in all directions as Icelanders continue to move from the hinterland to this one political, economic, and cultural center. Studio Granda has figured prominently in the development of the capital's architectural landscape. In the last decade, the office has completed three notable public buildings there: the Reykjavík City Hall (1992), the Supreme Court of Iceland (1996), and, recently, the Reykjavík Art Museum. All three lie within walking distance of one another in the city's heart, with the art museum at the edge of the main harbor.

The relationship between the art museum and the harbor is critical. Whereas the City Hall and Supreme Court commissions were for entirely new construction, the art museum is a renovation—more accurately, a transformation—of an existing harborfront warehouse, a 1930s concrete structure now on the historic register. The museum occupies most of the warehouse—two floors of the south wing and three of its north wing, which in turn enclose an open court. The new centrally located facility houses collections previously scattered in three locations throughout the city.

Peter MacKeith is assistant dean at the School of Architecture, Washington University in St.Louis, and is a permanent resident of Finland.



In the course of its research for the competition entry, Studio Granda discovered that the building occupied the former site of Reykjavík's main pier, dating to 1900. They felt that this buried construction (the pier was covered by landfill) deserved recognition, and so incorporated its skewed axis into the organization of the museum's entrance and circulation sequence.

Appropriately, the building is painted in contrasting shades, predominantly "Fishery Protection Vessel" gray for the spaces that aren't part of the museum, while the museum portions are called out in white. On the city facade, a concrete canopy tilts above the entrance, twisted at an angle to recall the shifted axis of the pier. The canopy's tilt also directs light into the dark, double-height lobby, lined in hot-rolled blued steel panels and black walnut flooring. The corridor follows the line of the pier's axis as it extends through the thickness of both wings and the courtyard, aligning the reception areas and the museum shop, then a small multipurpose room opposite an external exhibition area (the courtyard), and finally the museum library and curatorial and storage rooms.

Bent-steel stairs in each wing—seemingly hovering above the floor—lead to the gallery levels. Here, too, the visitor can retrace the path of the former pier on a bridge that connects the two wings and terminates in the museum cafe's immense glass wall facing the harbor.

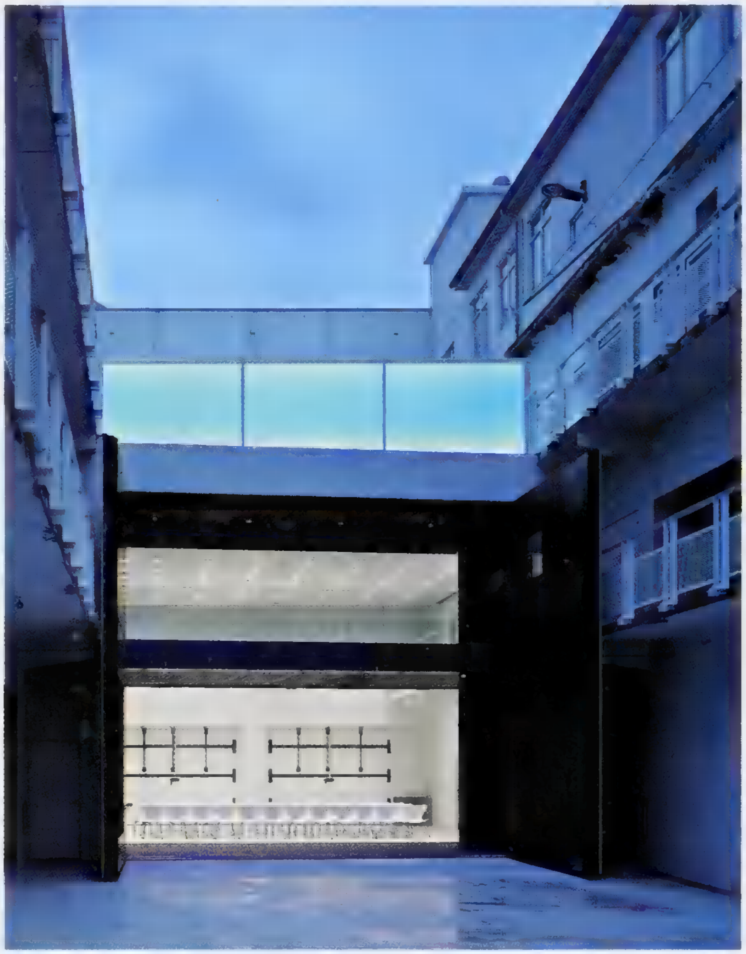
Differences in location and dimension distinguish the six museum galleries, yet they are united by a straightforward recognition of the concrete columnar structure, simply organized artificial lighting, and provisions for indirect daylight. By their dimensions, the galleries are

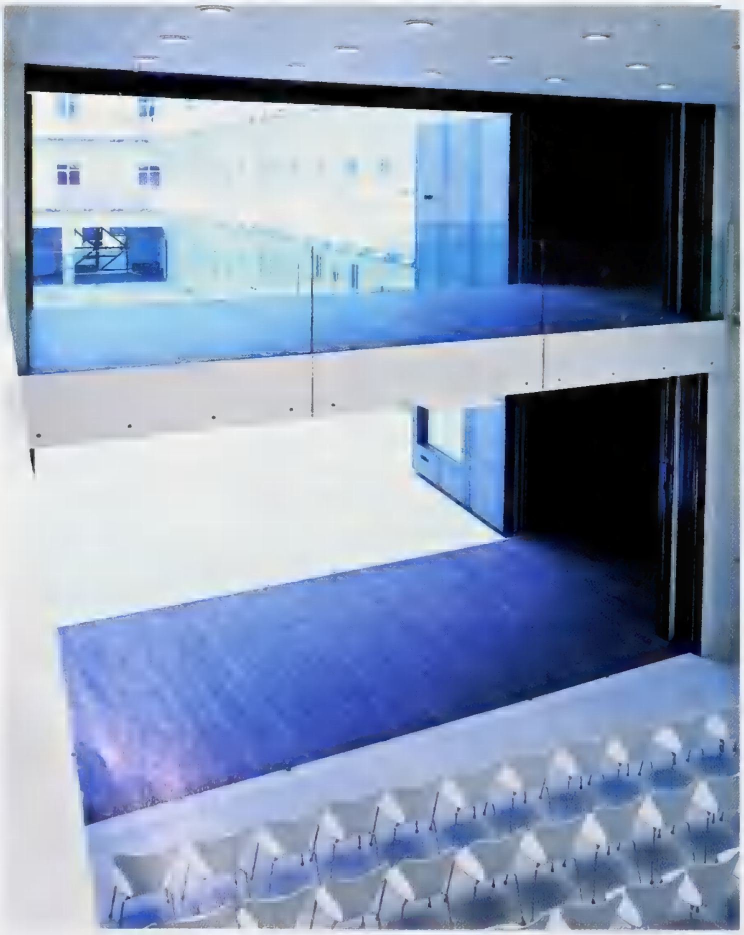
Project: *Reykjavík Art Museum, Reykjavík, Iceland*

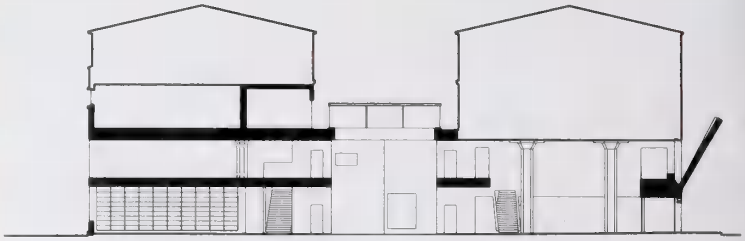
Architects: *Studio Granda—Margrét Hardardóttir, partner; Steve Christer, partner; Steinthor Kári Kárasson, architect; Heba Hertervig, architect; Silja Traustadóttir, intern*

Interior design: *Studio Granda*

Engineers: *Línuhönnun (structural); Rafteikning (electrical); Lagnataekni (environmental); Steindor Gudmunsson (acoustical)*

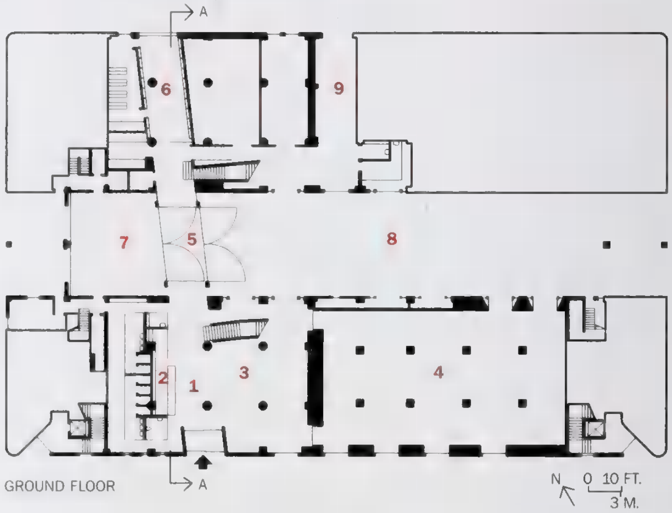






SECTION A-A

1. *Entrance lobby*
2. *Reception*
3. *Shop*
4. *Gallery*
5. *Pier link*
6. *Library*
7. *Multipurpose space*
8. *Court*
9. *Loading*



GROUND FLOOR

more suited to highly selective exhibitions of smaller-sized work, or larger-scaled and more singular works. The rooms are not entirely neutral: The column structure, in particular, lends each gallery a formal dignity, yet presents a robust existing condition.

The museum's administrative offices and Iceland's Architectural Archive reside on the uppermost level. Iceland's preserved architectural history may be small in quantity and depth, but significant nonetheless in the country's consciousness. Admirably, the city and the architects recognized the value of keeping one of the few remaining 1930s functionalist buildings in Reykjavík, and its revitalization has become part of a waterfront effort to reinvigorate older structures for cultural use. As a renovation, the art museum is Studio Granda's most condensed public work to date. The architects' design deftly weaves a figural element of the site's history within the structural order of the building, making necessary, inventive, and sensitive adaptations appropriate to the reception of visitors and the exhibition of art. The firm has also made a significant place by uniting a series of opposites—past and present, land and sea, warehouse and museum—in the intimate Icelandic capital. ■

Sources

Roofing: *Kemperol (elastomeric)*

Windows: *Tresmidjan Solvir (wood)*

Glazing: *Samverk (glass); Schuco (skylight)*

Doors: *Beyki (wood doors); Staltak (metal doors, sliding doors, fire-control doors, security grilles, special doors, upswinging doors)*

Hardware: *BSW (locksets); Lamaidinjan (hinges); Dorma/Geze (closers)*

Furnishings: *Fritz Hansen*

Lighting: *Concord; Gira (controls)*

Elevators: *Kone*

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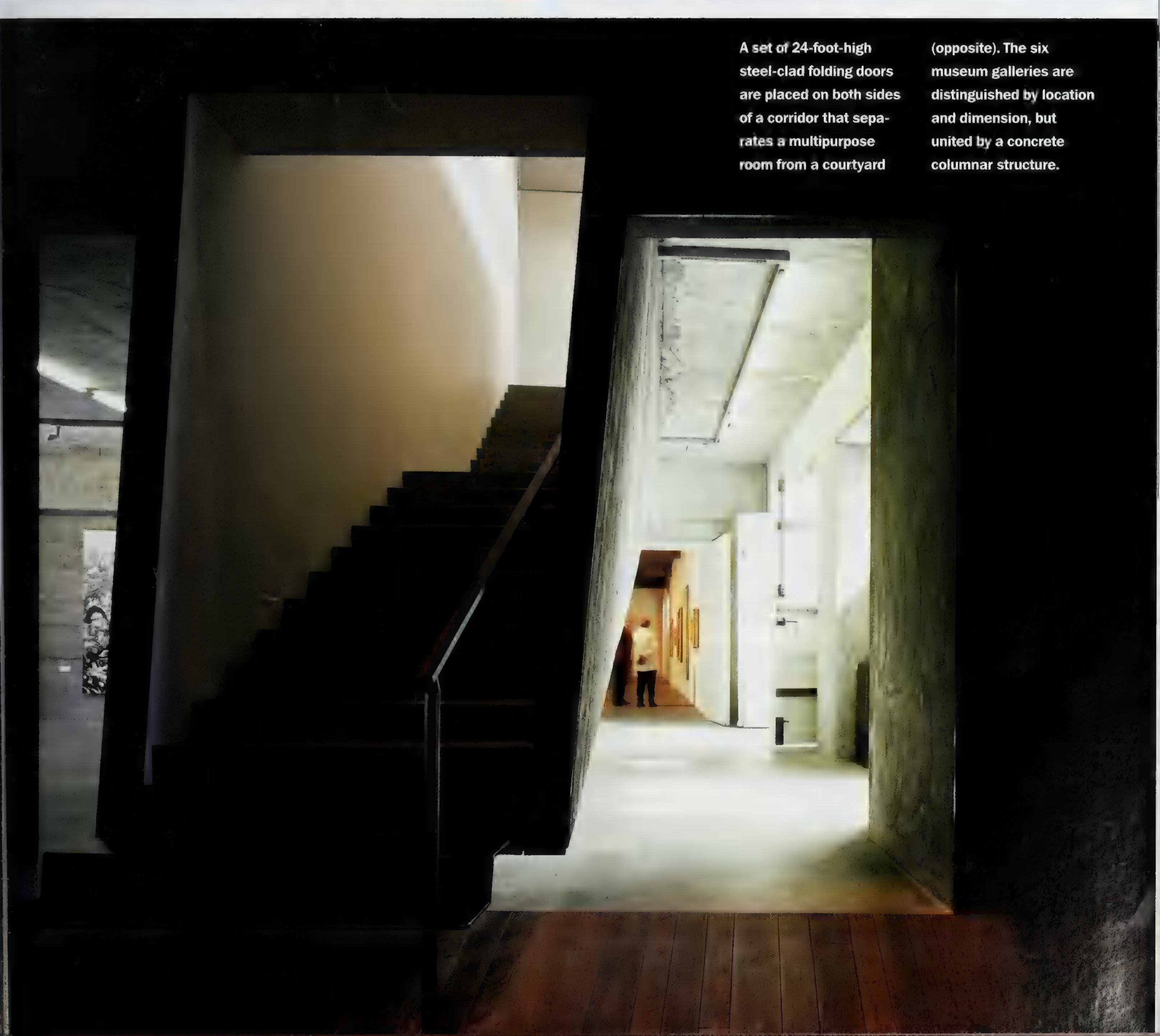
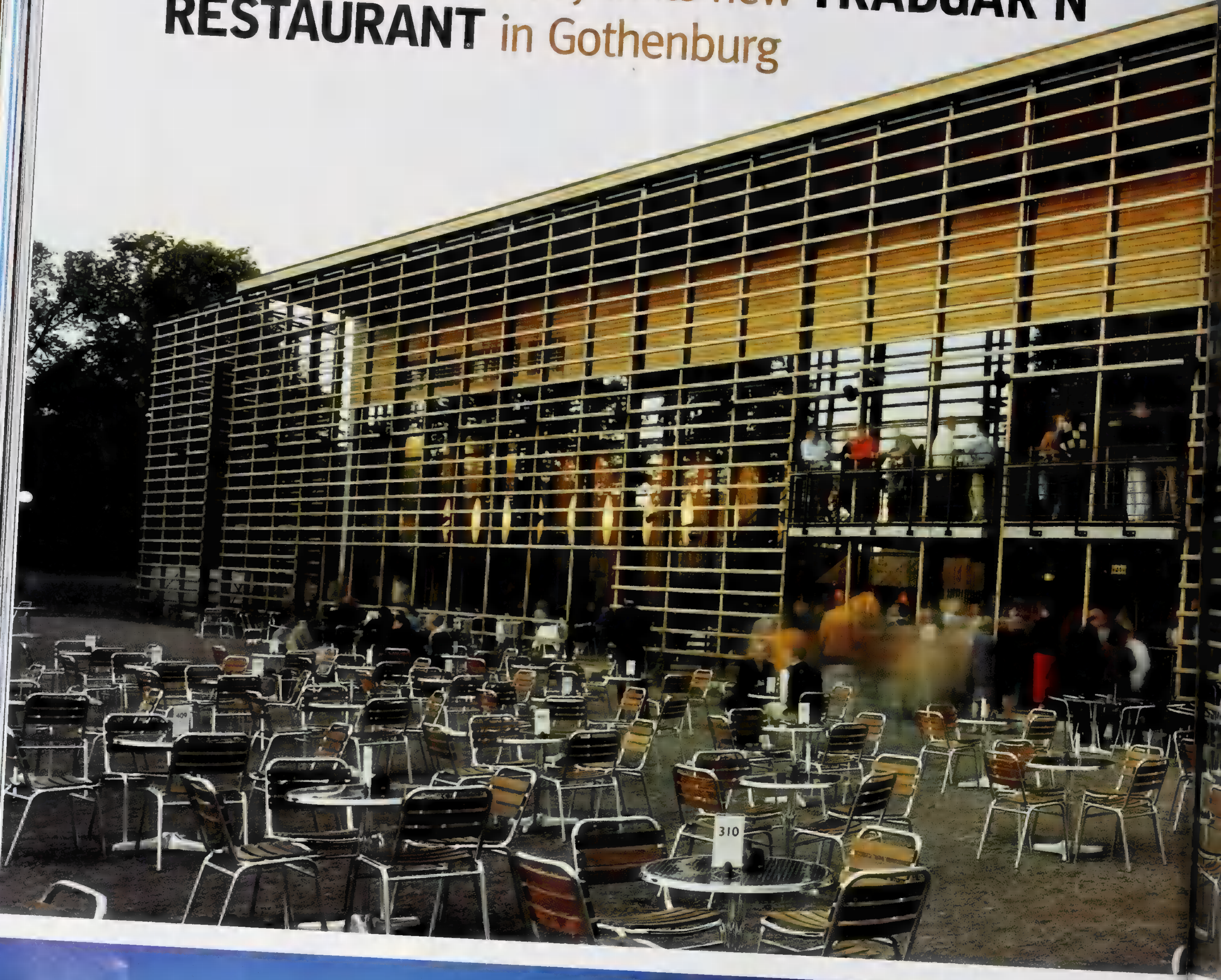
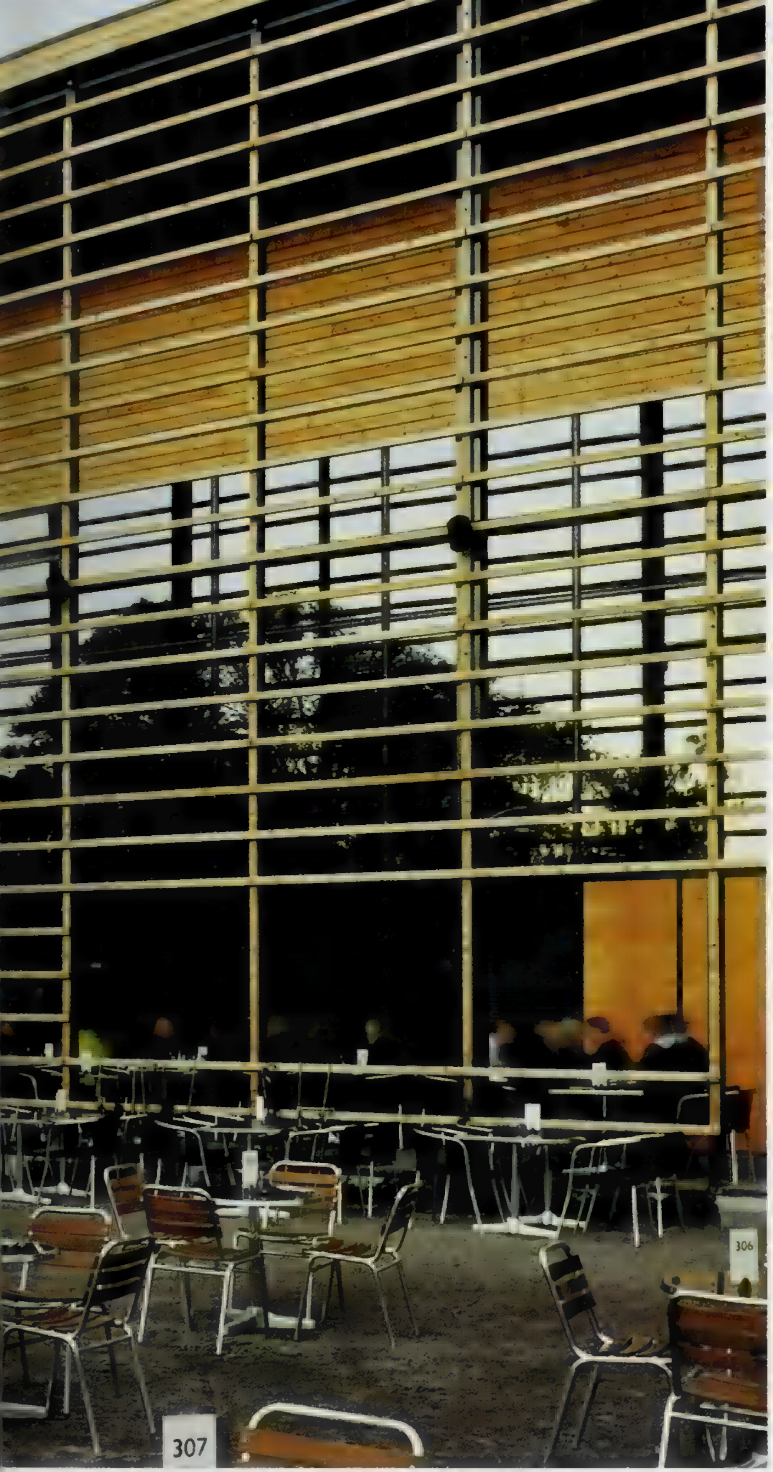


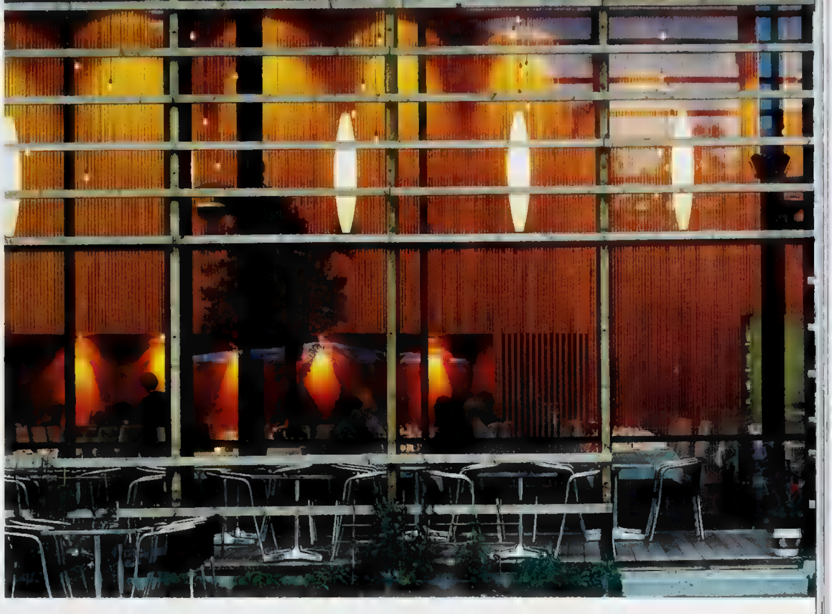
A set of 24-foot-high steel-clad folding doors are placed on both sides of a corridor that separates a multipurpose room from a courtyard (opposite). The six museum galleries are distinguished by location and dimension, but united by a concrete columnar structure.

Studio **Gron** of Sweden blends informality and monumentality in its new **TRÄDGÅR'N RESTAURANT** in Gothenburg



A giant trellis of untreated Siberian larch will slowly be overgrown by vines to make a great green wall during the summer. Behind the unifying green wall, the restaurant includes an informal bar/cafe, a first-class restaurant, and a nightclub for the younger crowd.





By Nicholas Adams

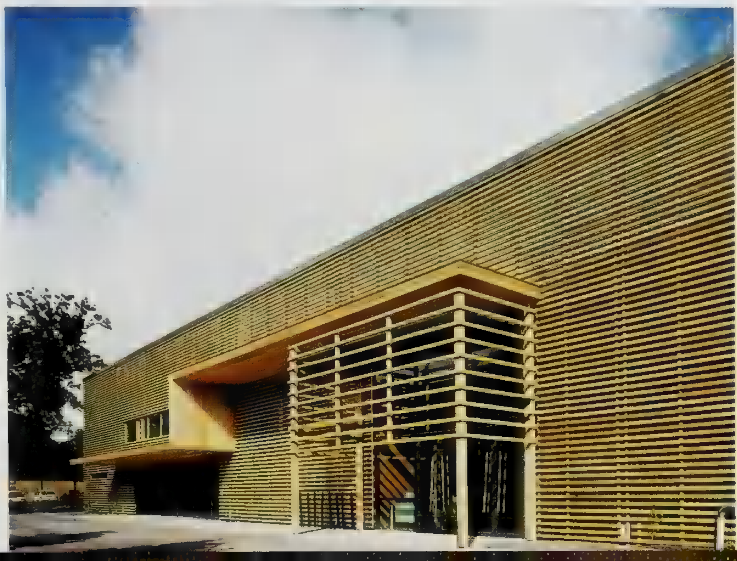
One of the high points of a trip to Gothenburg, Sweden, is a visit to Trägårdsforeningen, a public garden landscaped in the English manner. Built over the outworks of the 17th-century wall system and alongside the old moat-canal, the garden, opened in 1842, includes a rosarium, a butterfly house, and rolling lawns dotted with fountains, sculpture, and picturesque late-19th-century wood cottages where lunch and coffee are served. A special surprise is the Palm House, a miniature copy of Joseph Paxton's Crystal Palace built by a Scottish firm in 1878.

For 150 years a formal public restaurant and dance hall has faced the Palm House at the center of the park. But both the original and its replacement have since burned down. Now, the latest reincarnation, by Studio Grön of Gothenburg, combines a restaurant and a nightclub disco. Restaurant Trädgår'n is that rare contemporary commission in which a city administration has dared to fund significant architecture on a major municipal site and got everything right. Studio Grön was selected after an international competition and, despite its youth (it was formed in 1996), has produced a mature building that draws on Nordic traditions without looking stale or imitative.

The elevation of the restaurant facing the old Palm House and the garden consists of a giant trellis of untreated Siberian larch (to avoid sagging) that will slowly be overgrown by vines to make a great green wall during the summer. Behind the unifying green wall is a bar/cafe for informal dining and drinking, a first-class restaurant, and finally the nightclub for the younger crowd. If the architectural traditions of this building are distinctly Nordic, the traditions have been cranked up for contemporary taste.

Consider the main rooms. The restaurant is dominated by a birch-paneled inner wall that recalls Alvar Aalto's Finnish Pavilion at the

Nicholas Adams teaches architectural history at Vassar College and is currently a member of the editorial board at Casabella.



Project: *Restaurant Trädgår'n, Gothenburg, Sweden*
Client: *City of Gothenburg through Higab Gruppen AB*
Architects: *Studio Grön Arkitekter AB—Fredrik Lund, design management; Martin Forsby, project management; Henriette Michaelsen, Mika Määtä; Johan Lundin, Mikael Sonnsjo, Bjorn Edstrom, assistants*
Interior design: *Studio Grön Arkitekter AB with Vigdis Ruud*
Landscape: *Studio Grön arkitekter AB with Snohetta AS and Fritid Göteborg*
Structural engineer: *FB Engineering AB*

New York World's Fair (1939) or, closer to home, Nils Einar Erickson's Concert Hall in Gothenburg (1936). Birch, the Swedish wood par excellence, gives the room the same warmth as those distinguished predecessors. A giant window wall faces the trellis and the Palm House and fills the room with dappled sunlight by day. By night, hanging fixtures and tiny spots—like stars in the dark Nordic night—give it a magical character recalling the romantic nocturnal effects created by Gunnar Asplund at the Skandia Cinema in Stockholm (1923).

The nightclub at the other end of the building is little more than a black box with high-tech lighting, a high-powered sound system, and a balcony around the upper level that allows more dancing and a chance to see and be seen. Facing the garden is the bar, a kind of urban artists' cafe that provides simple meals and drinks. Between the building and the vine-covered trellis is one of the most genial areas, the veranda. Here one can retreat from comings-and-goings of the park visitors without losing contact with the open air. The veranda represents a remarkable blend of nature-inspired informality and monumentality that so often coexist in Swedish architecture.

Although based in Sweden, the principals of Studio Grön—Fredrik Lund, Martin Forsby, Henriette Michaelsen, Mika Määtä—come from Norway, Sweden, Denmark, and Finland. (They met as students at Chalmers Technical University, the architectural school in Gothenburg.) One can sense the multiplicity of their backgrounds in Trädgår'n: Asplund from Sweden and Aalto from Finland are there with a refinement and precision of detailing suggesting an attentive study of Danish architecture.

Indeed, it is this attention to detail that separates Restaurant Trädgår'n from many other new buildings in Sweden. Göran Arviddson, who represented the client, the city of Gothenburg, insisted on high-quality materials and backed the young architects in their plans. The city wanted a durable building—both in materials and in style—that would be a permanent resource for Gothenburg. Studio Grön's methods of working with the contractors have been written up as a model for other Swedish projects. The results show up not only in the tight logical details (at the stairs, in the entry foyer), but in the exquisite surfaces of the birch panels and appropriate matches of color with the concrete. The overall effect is a lighthearted place that is neither frivolous nor cheap, a tranquil and richly detailed space that is open and accessible to all. Enlightened municipal patronage, another significant Nordic tradition, continues to thrive in Sweden. ■

Sources

Closing and pulls: *d-Line (standard doors); Studio Grön (glass doors and public doors)*

Glazing: *Råda Glas and Centa*

Lighting: *Foscarini; Havana (restaurant)*

Acoustical ceilings: *Armstrong (restaurant, salon); Gyptone (other)*

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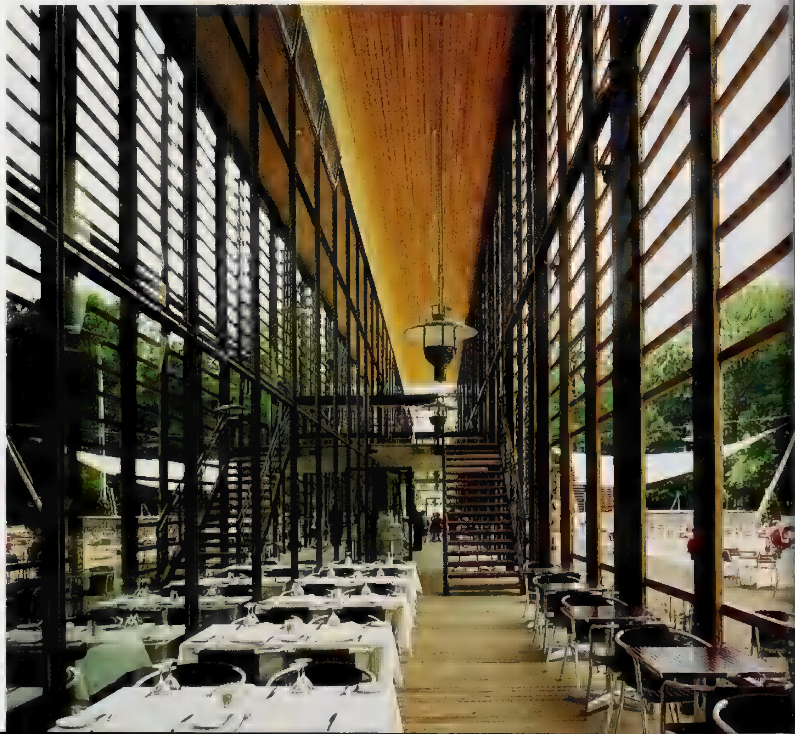
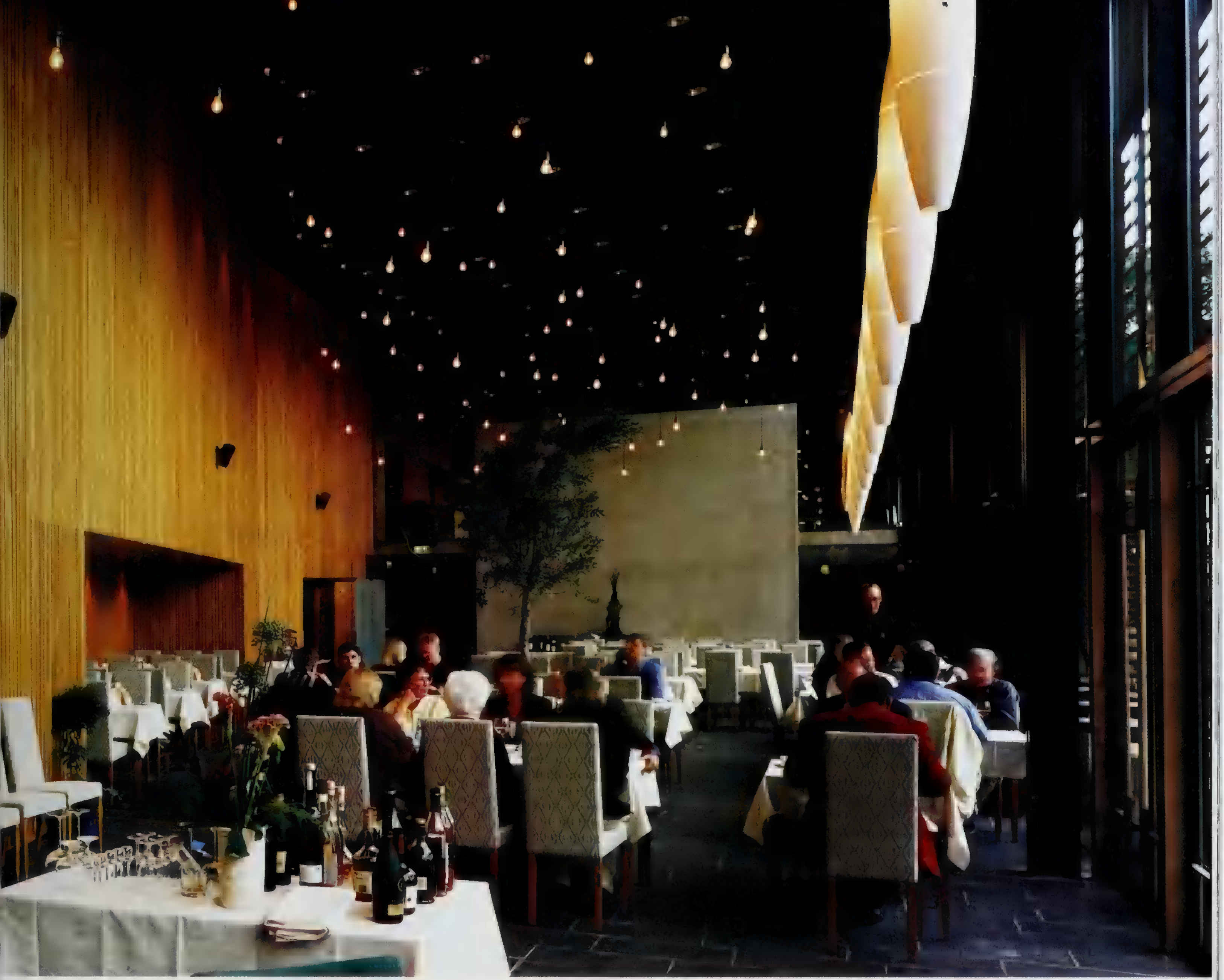
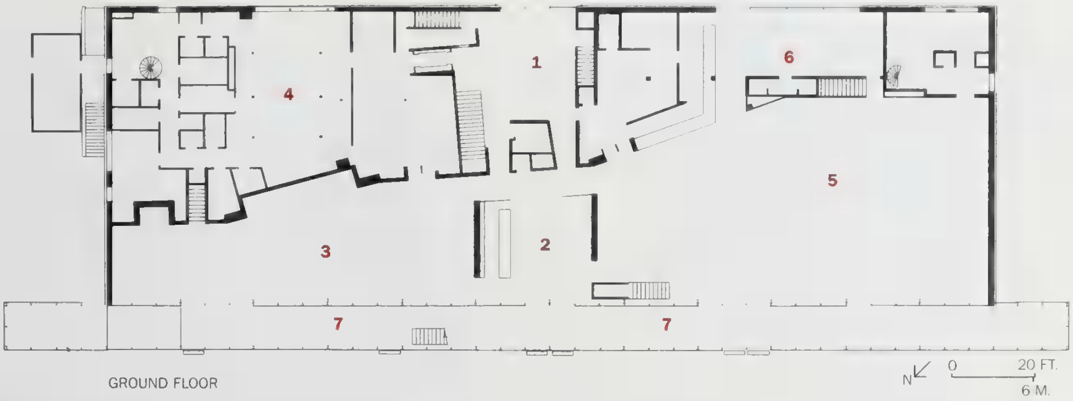
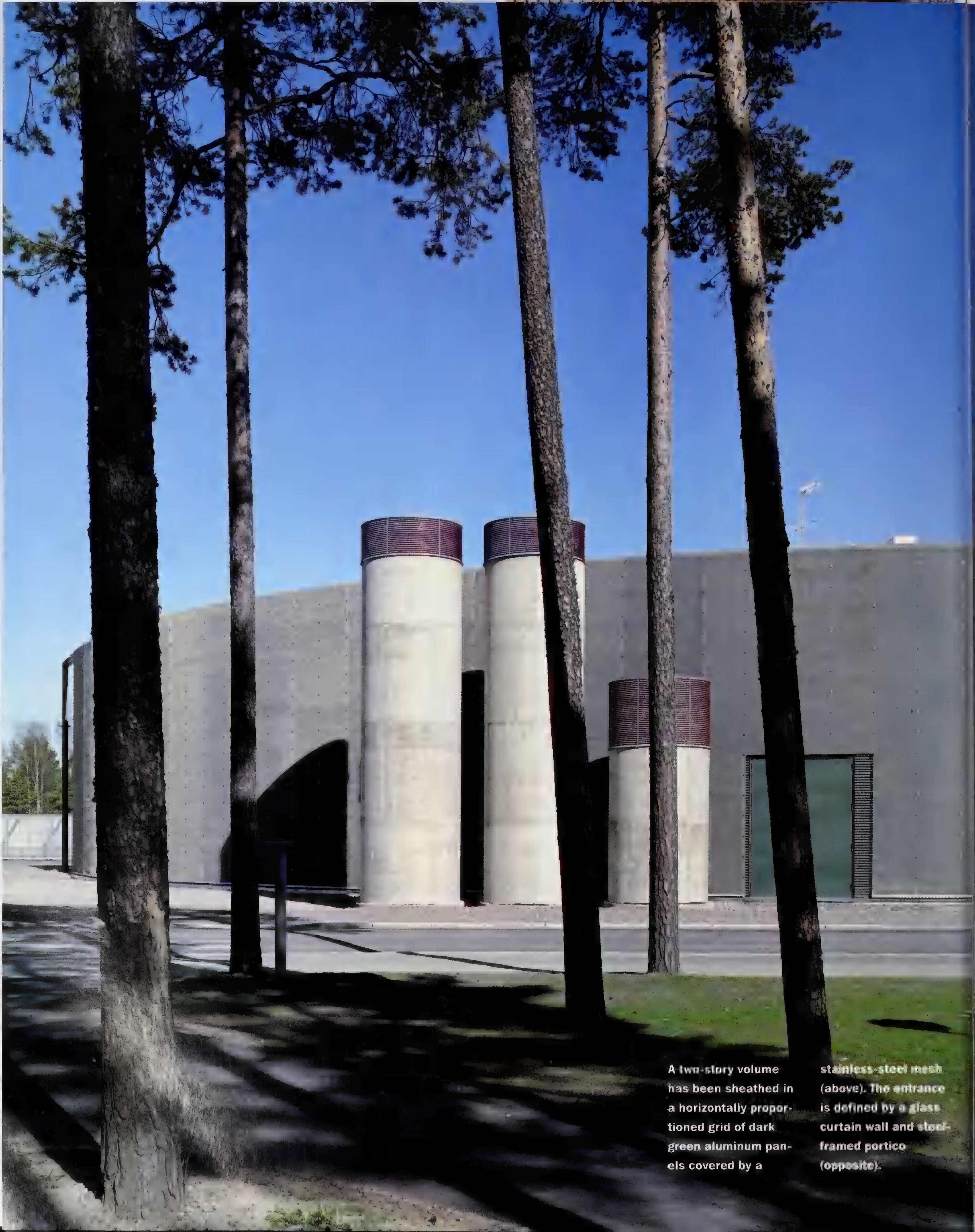




By night, hanging fixtures and tiny spots—like stars in the dark Nordic night—give the main dining room a magical character and the romantic nocturnal effects (above). The space between the building and the vine-covered trellis creates a veranda, one of the most genial areas in the restaurant (adjacent page). The foyer on the opposite (street) side of the restaurant has a stair leading to additional spaces.

1. *Foyer*
2. *Cafe*
3. *Main dining room*
4. *Kitchen*
5. *Night club*
6. *Side bar*
7. *Veranda*

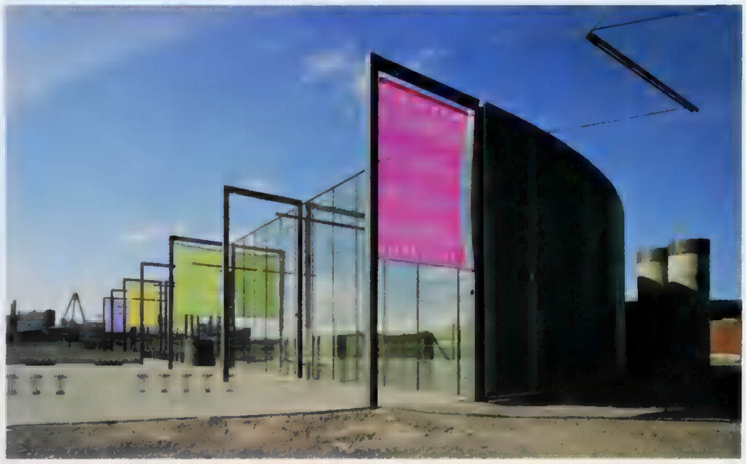




A two-story volume has been sheathed in a horizontally proportioned grid of dark green aluminum panels covered by a stainless-steel mesh (above). The entrance is defined by a glass curtain wall and steel-framed portico (opposite).

Heikkinen-**Komonen** explores simple geometries and modernist materials for the new **VUOTALO CULTURAL CENTER** in Finland

By Peter MacKeith



After nearly 20 years of collaborative practice, the Helsinki-based partnership of Mikko Heikkinen and Markku Komonen possesses an international reputation based upon recognizably forceful, coherent strategies of siting, form, materials, and construction. The practice is classicist in the best sense: It demonstrates a tenacious concentration upon a limited set of formal and tectonic principles, continuously adapted to contemporary circumstances. The firm's Vuotalo Cultural Center in the Helsinki suburb of Vuosaari, a result of a limited design competition it won in 1996, reveals these intentions succinctly, with modesty, clarity, and precision. The center, which opened only a few months ago, is already a locus of community activity.

Over the last 15 years, Vuosaari has developed as a satellite residential and commercial community of 40,000, at the eastern terminus of the metropolitan subway line, some 12½ miles up the coast from Helsinki. Vuosaari is now a hothouse of housing designs of all types, and day-care centers and schools have been common architectural competition subjects in recent years. Its center of gravity remains the area surrounding the metro station where Kolumbus, a linear shopping mall under a curving metal carapace, dominates this landscape. The site for the cultural center designated by Helsinki's municipal authorities is in an area best known for its 1960s housing blocks, a high school from the same period, and a swimming/sports hall.

The program called for a public library, a community auditorium, music rehearsal spaces, adult education facilities, and city cultural administration offices. Simultaneously, the new building had to integrate pedestrian circulation across the site between the high school and the swimming center, and between new underground parking lots and the activities of the center.

Heikkinen and Komonen's design relies on pure geometries to resolve these siting, circulation, and internal planning issues. In contrast to prevailing aesthetic winds elsewhere, Euclidean geometry remains alive and well for the two designers, still a valid means for achieving civic architecture. Their consistent use of formalist strategies across a range of programs and sites is highly identifiable and referential, acknowledging the geometries articulated earlier in the century by Gunnar Asplund, the rigorous proportional systems by Aulis Blomstedt, and the ascetic sensibilities of Aarno Ruusuvuori.

In the Vuotalo center, a cylindrical volume is positioned as point of site control, interlaced with a modular 20-foot structural grid, and then inflected with secondary structures. The actual structure is a two-story half-cylinder, about 257 feet in diameter, which stands resolutely on the main grade level between the shopping mall, high school, and swimming hall. The split open face of the cylinder—the entrance facade and its steel-framed portico—is placed to continue the north-south axis of the shopping mall's circulation spine, extending it out to a hedgerow labyrinth, yet to be planted. The high school entrance is located on a cross-axis with the revolving entrance door. Below grade, an indoor corridor connects the center with the high school, the swimming hall, and other facilities. Also below grade, an open-air portion of the encircled site

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Project: *Vuotalo Cultural Center, Helsinki, Finland*

Owner: *City of Helsinki*

Architects: *Heikkinen-Komonen Architects*

Engineers: *Leo Maaskola Engineers (HVAC); Olof Granlund Engineers (electrical); Akukon Engineers (acoustical); Teakon/Timo Tuovila (theater consultants); City of Helsinki, Department of Public Works (geotechnical)*

Interior design: *Heikkinen-Komonen Architects*

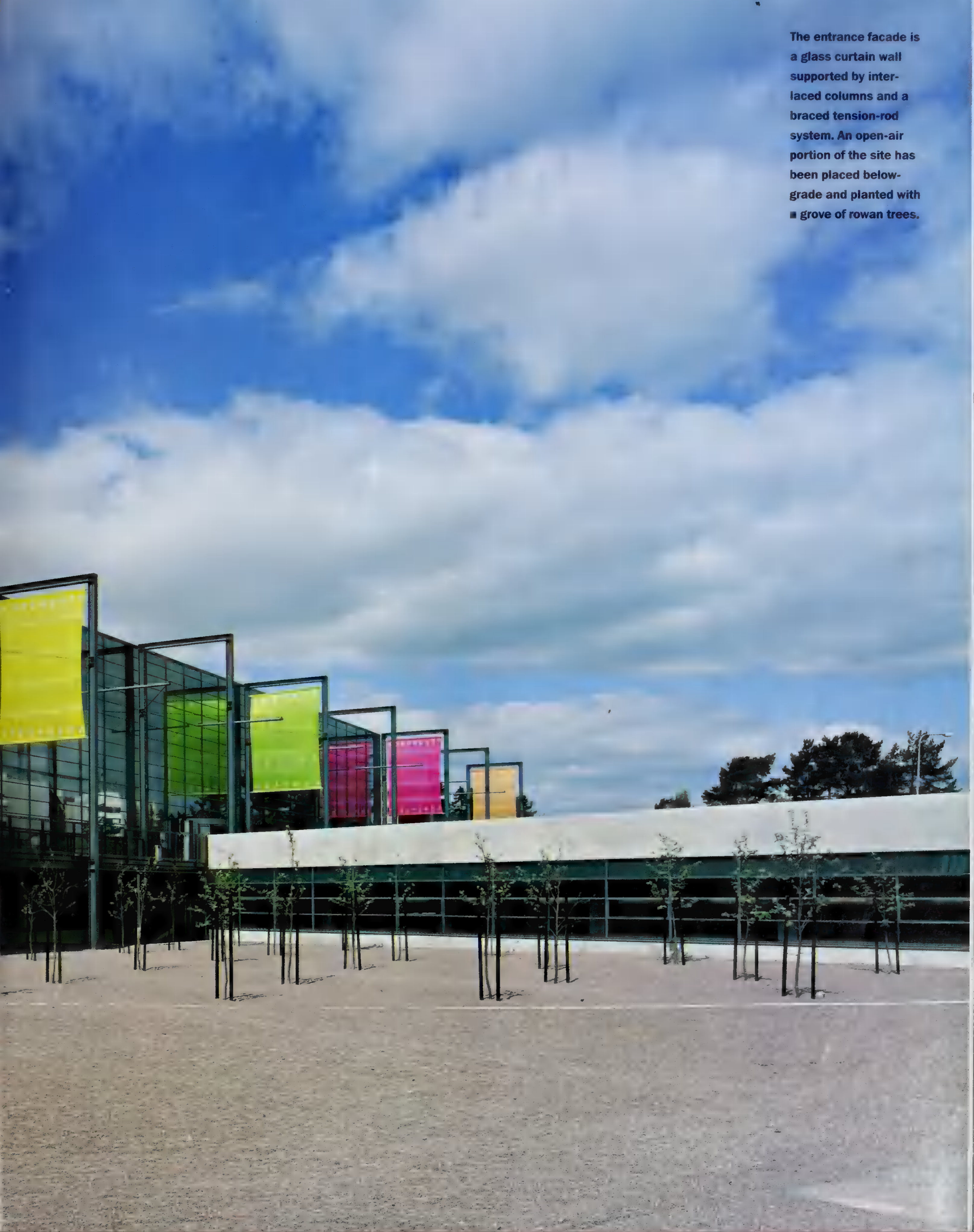
Landscape: *Byman & Ruokonen*

General contractor: *Skanska*

Peter MacKeith is assistant dean at the School of Architecture, Washington University in St. Louis, and is a permanent resident of Finland.

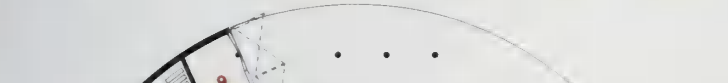
VUOTALO
VUOTALO

The entrance facade is a glass curtain wall supported by interlaced columns and a braced tension-rod system. An open-air portion of the site has been placed below-grade and planted with a grove of rowan trees.



Music rehearsal rooms, the stair landing, and classroom corners are set out in serrated formation above the lobby (opposite), and the multipurpose hall occupies a wedge-shaped space on the ground floor (below). Careful attention has been given to the admission of natural light, as demonstrated in the library (right).

1. *Plaza*
2. *Foyer*
3. *Multipurpose hall*
4. *Children's library*
5. *Staff*
6. *Library*
7. *Coffee shop*
8. *Meeting rooms*
9. *Gallery*



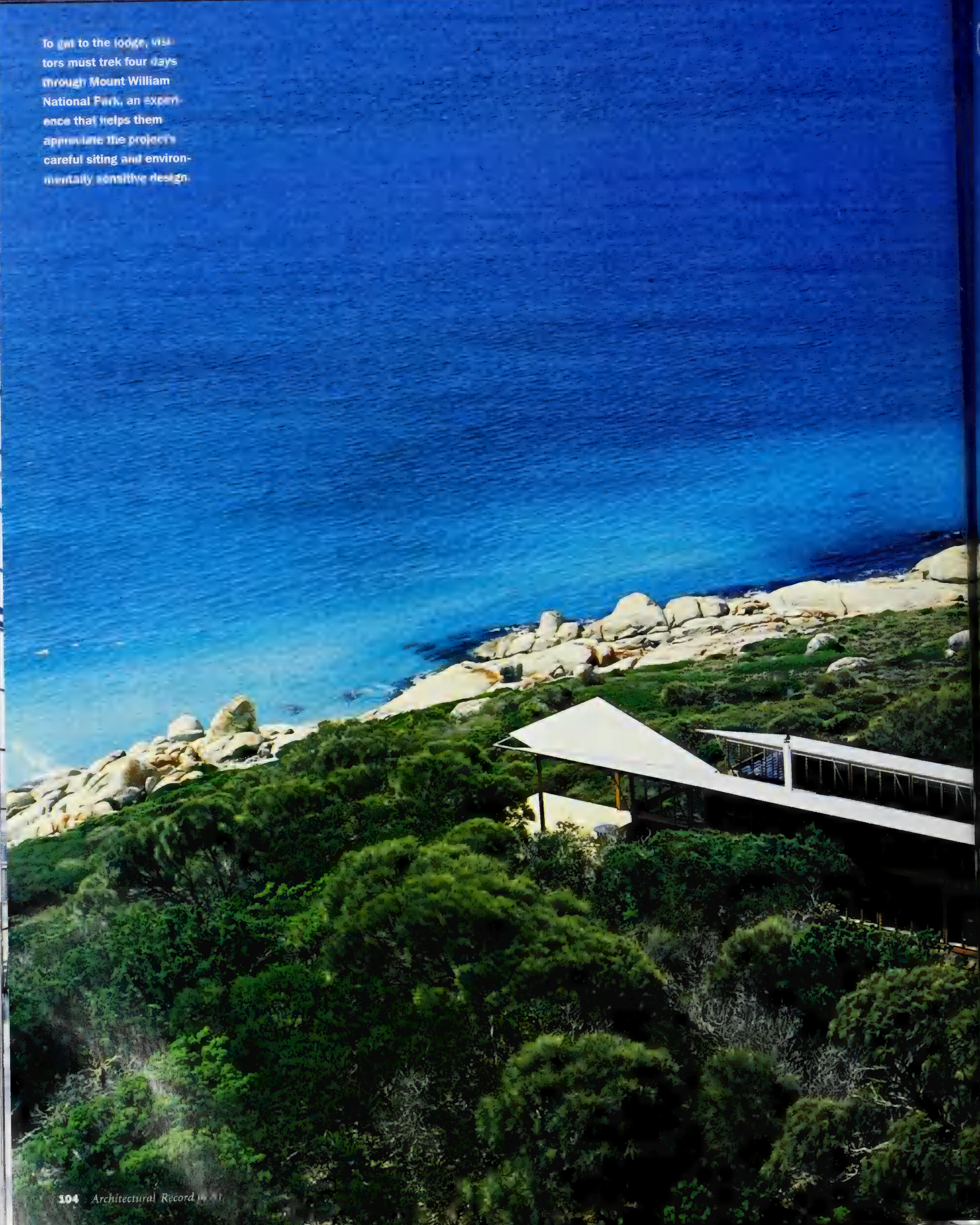
ENTRANCE FLOOR

has been planted with a grove of rowan trees on the 20-foot module. The architects confidently envision a canopy of the mature trees creating a green cloud on level with the main entrance path.

Inside the half-circle building, the double-height lobby provides access to the wedged-shaped community auditorium and general reading rooms. Two long double-height, top-lit reading rooms—one for children and one for adults—are notable as vertical shafts of space rising in counterpoint to the building's prevailing horizontality. A diminutive cylindrical children's reading tower winningly restates the dominant formal geometry. And a generous winding stair leads to the adult education facilities and city administrative office on the upper level. Throughout the interior, careful attention has been given to the admission of natural light, often through a series of glazed wall planes and adjacencies to top-lit spaces.

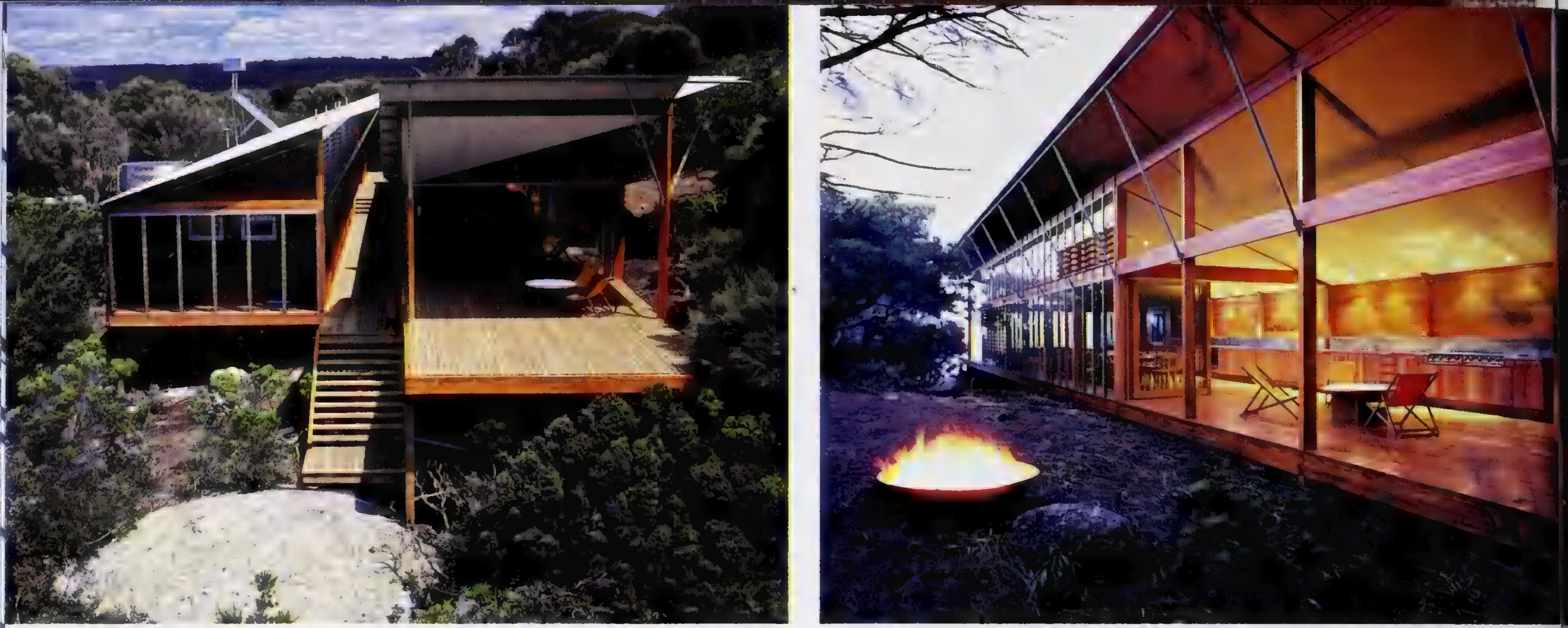
Vuotalo's poured-in-place concrete structure of walls and slabs is faced along the entrance by a glass curtain wall supported by interlaced columns and a braced tension-rod system. Interior finishes are direct and unadorned, relying on a strict catalog of standardized metal grilles and panels and a restrained palette of grays and browns. A horizontal grid of dark green aluminum panels sheathes the cylinder's exterior, which is virtually obscured by a suspended skin of stainless-steel mesh. In fact, the mesh is an industrial conveyor belt material, the result of extensive material research conducted by the partnership's staff. While the mesh skin offers little view into the interior of the cultural center, it does provide both light and visual access from within.

This formal control, reliance on module, proportion, and standardized materials, and an increasingly evident desire to dematerialize a building's surfaces are well-known tactics for Heikkinen and Komonen. These features can be transferred to other locales, to be sure, but in the architects' own backyard they possess a particular strength and purposefulness. Vuotalo represents a modest example of what can be accomplished even with the toughest of municipal construction budgets. Moreover, its restraint is a bracing, even instructive, contrast to the nearby neon-layered shopping mall and surroundings. As a member of the office cleaning staff, a resident of Vuosaari, exclaimed, "It makes everything around it look overdecorated!" ■



To get to the lodge, visitors must trek four days through Mount William National Park, an experience that helps them appreciate the project's careful siting and environmentally sensitive design.

On Australia's Tasmanian coast, Ken **Latona's** rugged yet elegant **BAY OF FIRES LODGE** brings style and simplicity to eco-tourism



To keep visitors cool without air conditioning Latona covered the deck (above left) and veranda (above right) and opened rooms with glass louvers (opposite, top). The main walkway (opposite, below) delivers powerful views.

By David Clark

Standing on the remote northeastern coast of Tasmania, you could imagine yourself on a deserted island. Black cockatoos squawk overhead, dolphins ply the surf, and wallabies occasionally wander to the shore to nibble on iodine-rich seaweed. The only signs of human life are the middens, piles of discarded shells that mark the feasting places of the aborigines who lived on this land for thousands of years.

On a piece of private property here, on the edge of Tasmania's Mount William National Park, architect and planner Ken Latona has built the Bay of Fires Lodge. Reached by foot at the end of a four-day trek through the reserve, the lodge points architecture and tourism onto a more ecologically sensitive path.

Latona, who splits his time between Sydney and Tasmania, represents the Australian school of architecture that advocates "touching the earth lightly," an ethic exemplified most famously by Glenn Murcutt and Richard Leplastrier, architects admired for their poetic understanding of place. Latona studied with both men at Sydney University in the early 1970s and, like them, has made environmentally sensitive design intrinsic to his work.

"I came to understand through people like Murcutt, who is still a close friend, that the Australian landscape is so unusual in world terms, and so diverse in itself, that if you don't pay attention to the details of that landscape—you don't have an architecture that fits," states Latona.

In addition to designing the Bay of Fires Lodge, Latona owns and operates it, along with a string of trekking huts in the Cradle Mountain National Park in central Tasmania. The huts and now the lodge are Latona's way of connecting people to the unique environment of Australia's southernmost province, a 26,000-square-mile island that's a short flight from Melbourne. During summer months the Bay of Fires Lodge is usually occupied by groups of up to 10 bushwalkers plus their two guides, although on occasion two groups will overlap.

The building consists of two long Tasmanian-hardwood-and-glass pavilions on an east-west axis and sited on the southern slope of a hill close to the shore. Latona avoided building on the more sheltered and sunnier northern slope (remember, this is Down Under) for two reasons. First, there are aboriginal sites on the warmer northwestern pockets away from the wind. "It was very important to avoid building there—to avoid a desecration," he explains. Second, he felt the northern location would have made the building a more visible protrusion from the landscape. Instead, he placed the lodge below the southern crest, where its roofline sits just under the canopy of casuarina trees and approximates their windswept line. From the walking tracks in the park, it can hardly be seen.

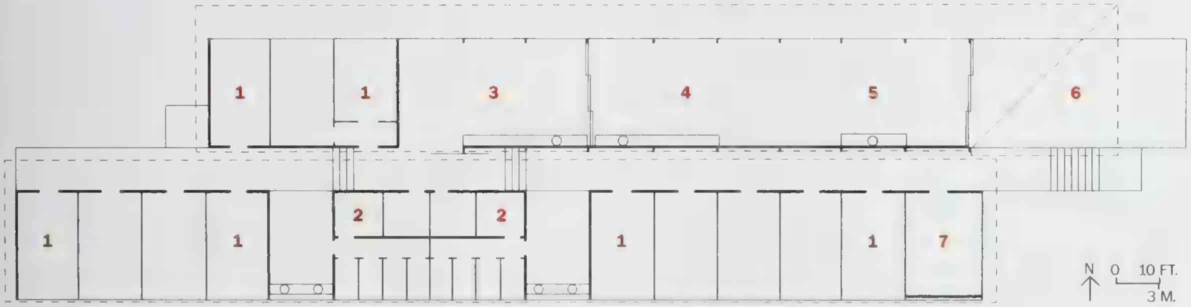
Set on a 10-by-17-foot (3-by-5-meter) grid of columns, the building has one pavilion a few feet lower than the other, following the contour of the slope. The upper pavilion serves mostly communal uses, such as cooking, eating, and lounging, and includes an open veranda room in the middle and, at its end, a large deck cantilevering out from the bush and overlooking the sea. The lower pavilion contains areas that are more private—a bank of bedrooms on either side of storage rooms and shared bathroom and toilet facilities. The bedrooms open directly onto a long outdoor corridor that runs the full length of the lodge. This 165-foot-long spine, the lodge's most memorable space, forms a timber-lined channel shooting out to the sea and sky at one end and the bush at the other.

Just as the dramatic spine connects the lodge with the surrounding landscape, its sloping roofs capture the northern sun, bringing daylight and warmth into the living pavilion through a glass-louver wall and into the bedrooms via louvered clerestory windows. At the heart of the plan, the veranda room sits under the building's great roof, open on one side to a clearing in the bush. At the end, the deck practically floats above the landscape, with its roof rising up to align with the horizon.

Latona calls his buildings "simple sheds—nothing more." Indeed, they are that, but all the more elegant and seductive for it. Their detailing is not sophisticated—just "straight off the saw," which seems appropriate for the place. Materials, brought in by helicopter, were cut to

David Clark is a Sydney-based journalist who writes frequently about architecture and design. He is a former editor of Belle *magazine.*

Project: *Bay of Fires Lodge, Mount William National Park, Tasmania, Australia*
Owner: *Bay of Fires Pty Ltd.*
Architect: *Ken Latona, Architect—Ken Latona, principal; Jonathan Buist, documentation*
Engineer: *Gandy + Roberts (structural)*



FLOOR PLAN

1. *Bedroom*
2. *Storage*
3. *Veranda*
4. *Dining*
5. *Sitting*
6. *Deck*
7. *Library*

fit on-site by the architect and a team of "bush carpenters," as Latona refers to his crew of builders skilled in the ways of the region and the landscape. True to his collaborative nature, Latona says he relied on the team's "collective wisdom" to refine the design during construction, "stopping only when the building was finished."

Latona spent 18 months visiting the site to make sure it was right and just 15 weeks building the lodge with a team of up to 12 people. He designed the project with the attitude that it was temporary and could be easily removed. To make the buildings ecologically responsible, Latona and his crew removed only three casuarina trees during construction and equipped the lodge with composting toilets, gray- and black-water reticulation systems, imported gas bottles for heat, and solar panels for power.

Seductive in its simplicity, the Bay of Fires Lodge offers the right level of spartan comfort to be a welcome retreat for weary bushwalkers and serves as the perfect connection to a remarkable landscape. ■

Sources

Tasmanian hardwood boards: *Gunns Timber*

Metal roofing: *BHP (Colorbond)*

Aluminum louvers: *Naco*

Wood doors and sliding doors: *Custom by Tasman Joinery*

Cabinetwork: *Custom by Mick Dabrowski*

Solar system: *Rob Wells*

Composting toilets: *Clivus Multrum*

Gray- and black-water treatment: *Cradle Huts*

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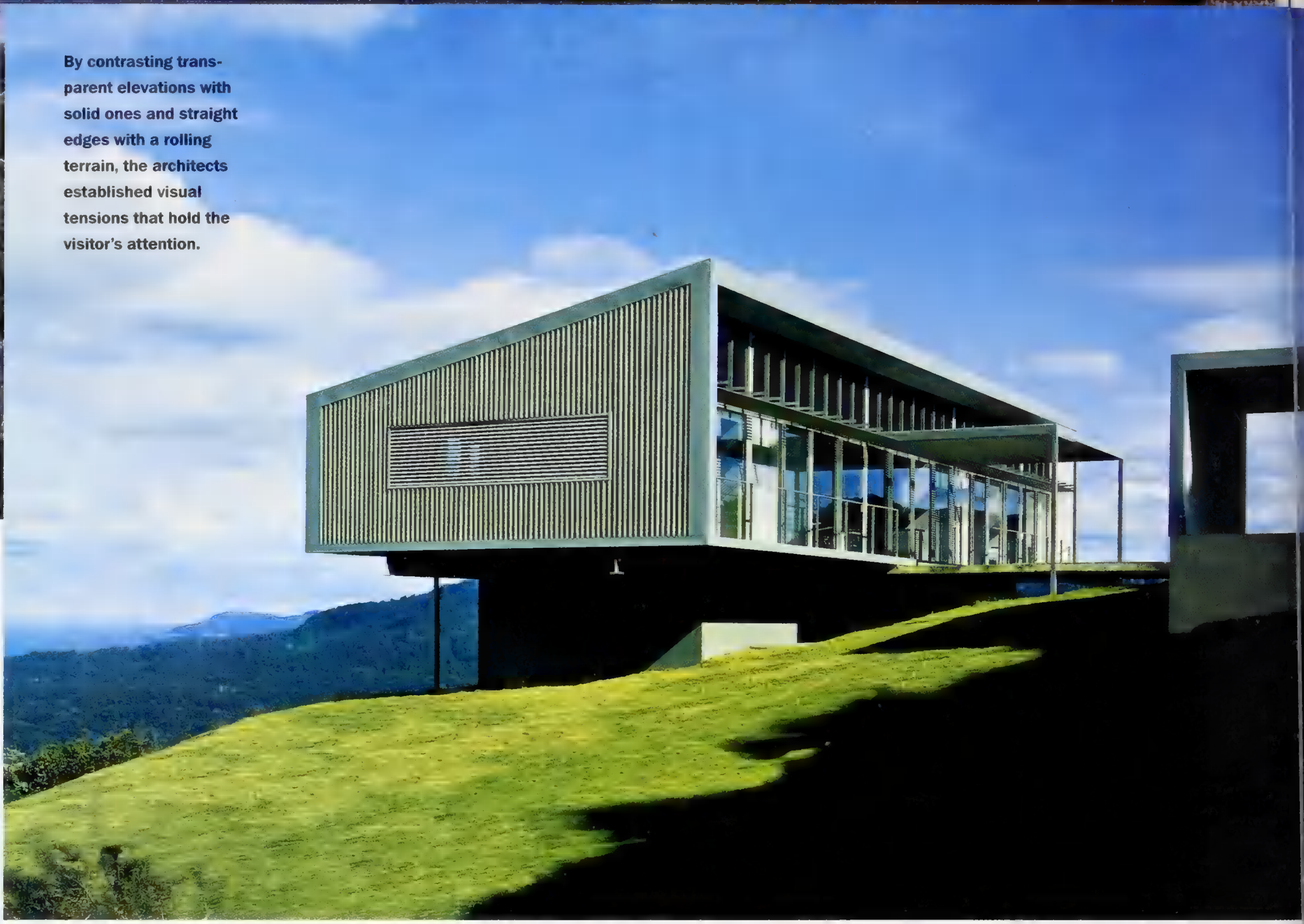
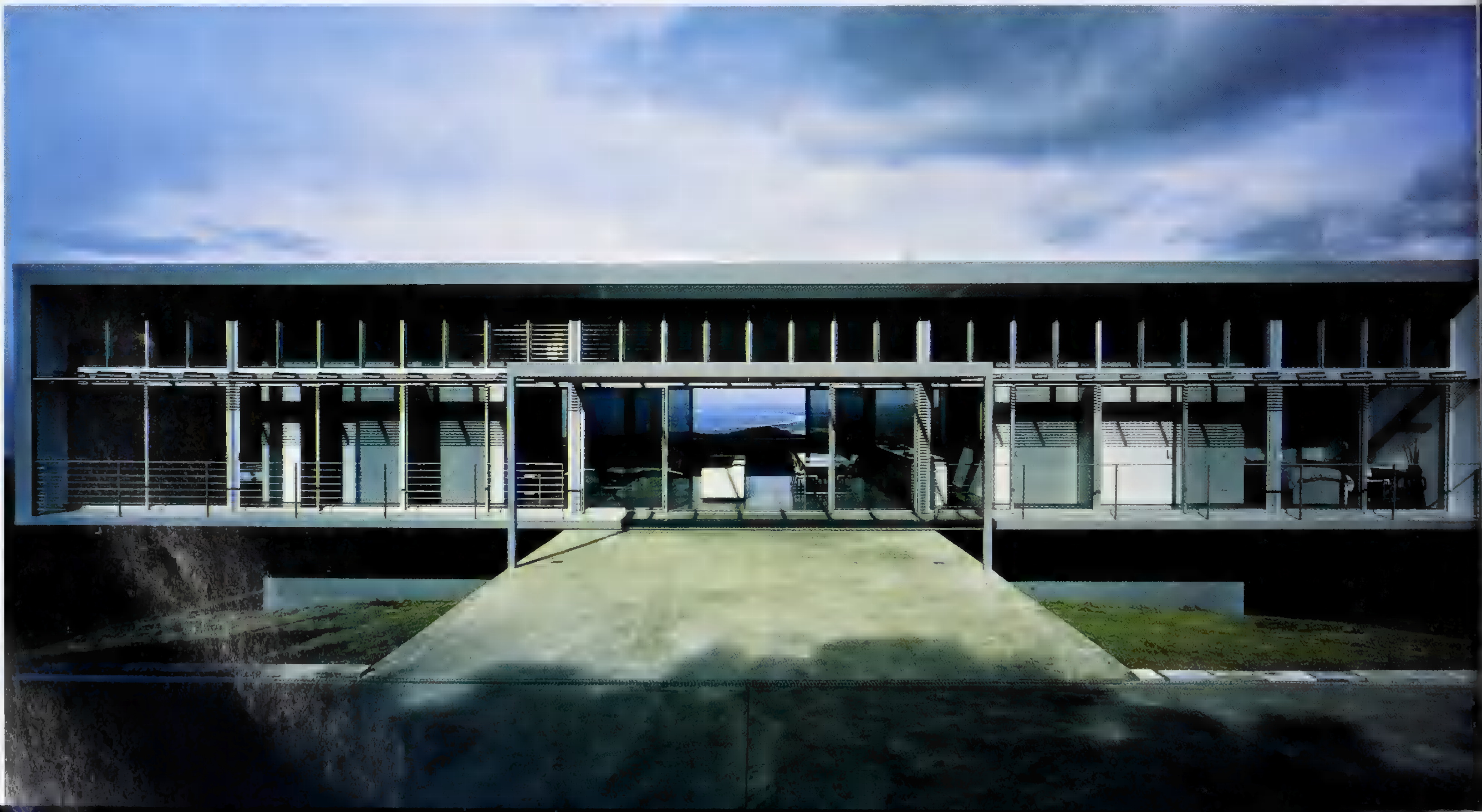
By contrasting transparent elevations with solid ones and straight edges with a rolling terrain, the architects established visual tensions that hold the visitor's attention.





Engelen Moore brings its particular brand of uncluttered modernism to the mountainous setting of the **ROSE HOUSE** outside of Sydney

By David Clark

The Rose House sits high on the slope of Saddleback Mountain, about a two-hour drive south of Sydney, and offers spectacular views of the coastline in the distance. Indeed, the Sydney firm of Engelen Moore designed the project as a viewing platform, with sliding glass doors running the entire length of the south and north elevations. The transparency of the house is seductive. As soon as you pull into the driveway, you can see right through the 2,500-square-foot house out to the ocean. Walk across a wide concrete bridge linking the carport to the main building and you've entered the precise, uncluttered world characteristic of the architects.

Since joining forces in 1995, Tina Engelen and Ian Moore have worked primarily on residential projects: first high-profile houses and recently a spate of stylish apartment buildings that have created a buzz in Sydney's hungry real-estate market. Moore comes to architecture by way of engineering in New Zealand, and London, and spent four years at Arup in Hong Kong working on Norman Foster's Hong Kong Shanghai Bank building before returning to Australia to study architecture. Engelen, who had achieved prominence as a furniture and interior designer before establishing her partnership with Moore, comes from a family that has been part of Sydney's design world for over 30 years. Her parents started the Danish Design Centre in the early 1970s, and today her two brothers run the business, now called Dedece and considered one of the leading contemporary furniture suppliers in Australia. Engelen herself contributes to Dedece in her role as creative director.

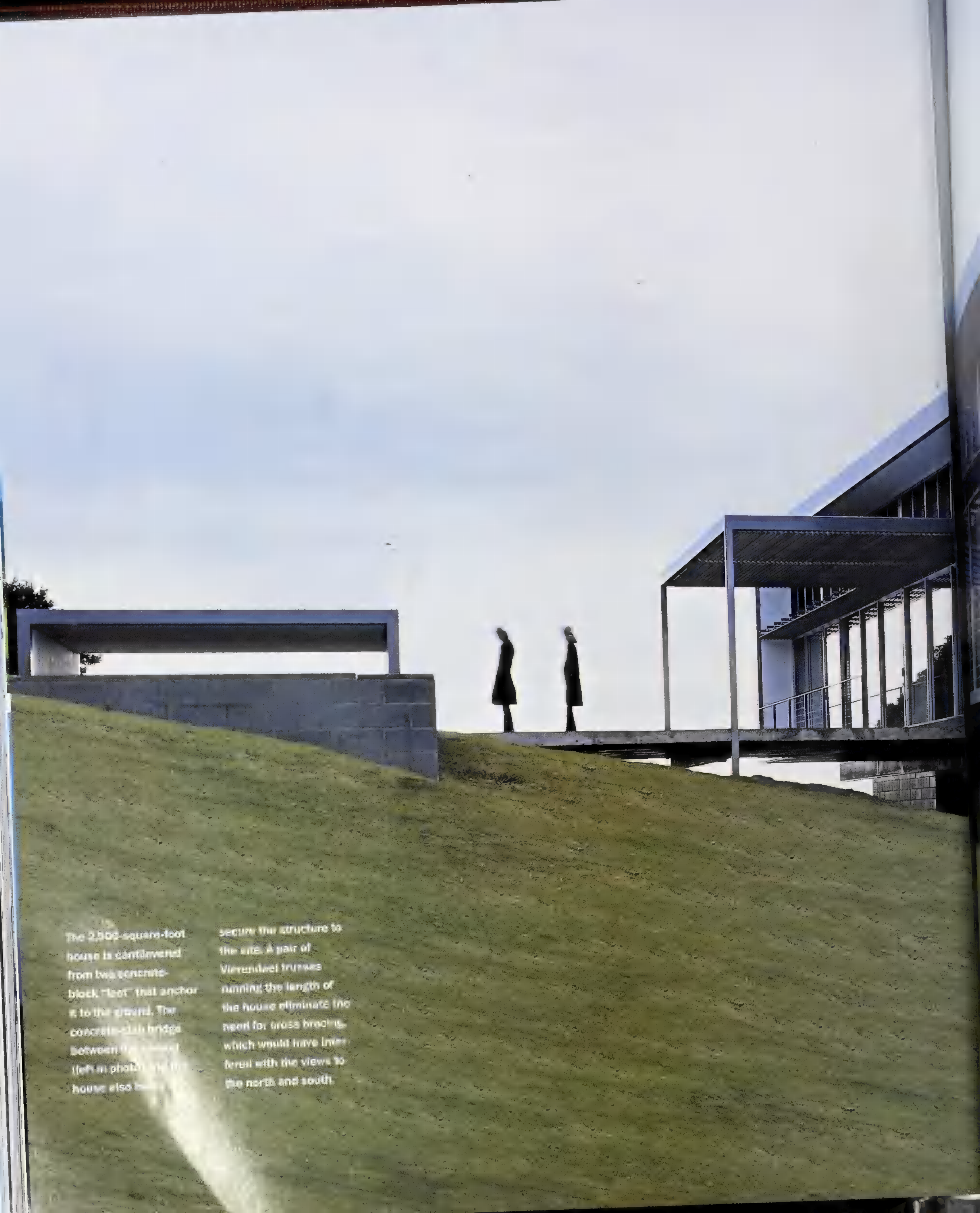
Engelen and Moore approach their architecture as if it's a product. Indeed, their signature is clearly stamped on all of their projects. The architects have at times likened "Engelen Moore" to a fashion label, and recently they've trademarked their name worldwide. But to suggest they are all style over substance would be inaccurate. A rigorous pursuit of modernist logic supports all of their work.

The Rose House is the architects' first project in a rural setting after a string of houses and residential towers on tightly knit urban sites. Nevertheless, their signature is there, perhaps a result of what the architects call their "kit of parts"—elements of their buildings that have, in the true spirit of modernism, become standardized, reused, and adapted from project to project.

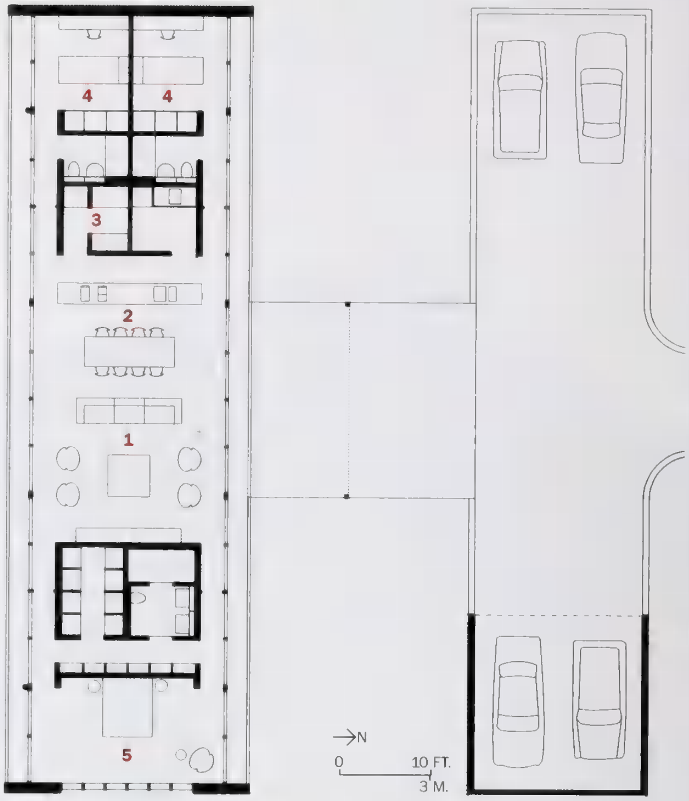
The kit includes sliding glass doors, glass window louvers, overhead track lighting, roller blinds, external aluminum louvers, and sleek, modern furniture. But perhaps the most important ingredient, especially in this house, is the pair of service pods that contain storage and wet areas. Engelen and Moore have employed this system on a number of projects, using the pods to define spaces without making conventional rooms. Pulled away from the building envelope, the pods allow the interior to flow around them, enhancing a sense of spaciousness. In the Rose House they divide the house into three zones, east for the parents, west for the two teenage children, and in the middle a living, dining, and kitchen area for everyone. Moore says that "by putting these two elements in space without touching the exterior walls, the interior becomes continuous." He explains, "It's possible to stand at one end of the house and look right through to the other end, which makes the place feel bigger. Also, by holding these pods back from the glazing line, we set up diagonal vistas. The views are fantastic in every direction, so it was important that we got all of them."

The clients, who are in their mid-40s, grew up around

Project: *Rose House*
Saddleback Mountain,
New South Wales, Australia
Owners: *Peter and Maria Rose*
Architects: *Engelen Moore—Ian Moore, Tina Engelen, principals; Dua Cox, Claire Meller, Sterrin O'Shea, design team*
Engineers: *Peter Chan + Partners (structural); Cottier + Associates (geotechnical)*
General contractor: *Phillip C. Young*

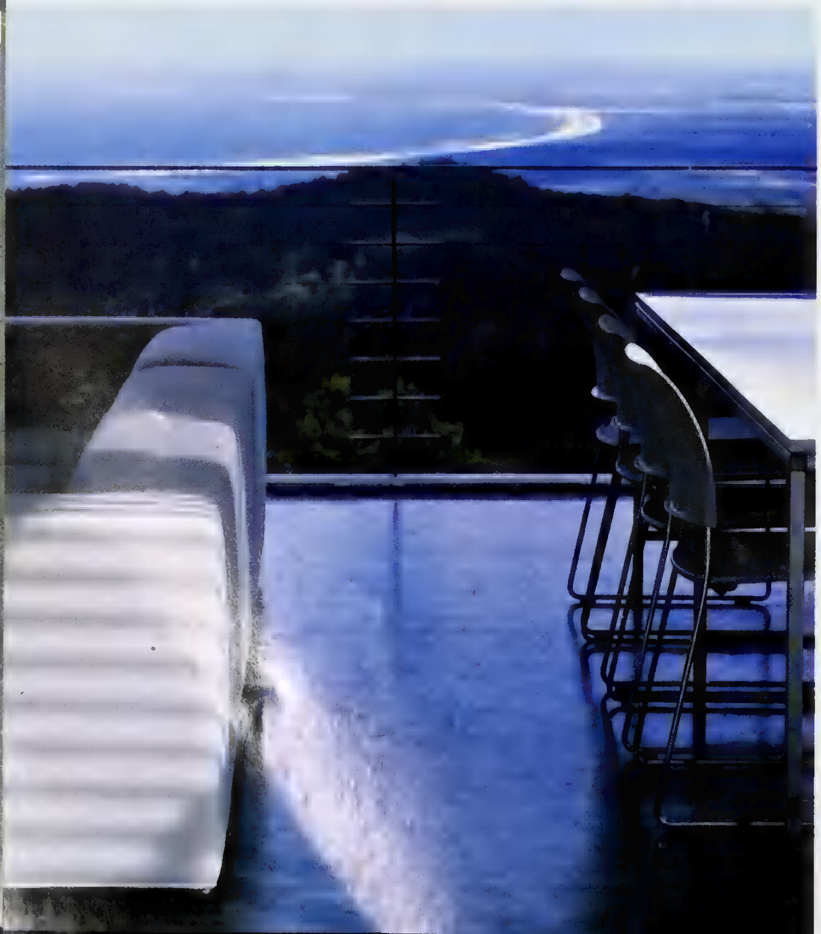


The 2,500-square-foot house is cantilevered from two concrete-block "feet" that anchor it to the ground. The concrete-slab bridge between [illegible] (left in photo) and the house also [illegible] secure the structure to the site. A pair of Vierendeel trusses running the length of the house eliminate the need for cross bracing, which would have interfered with the views to the north and south.

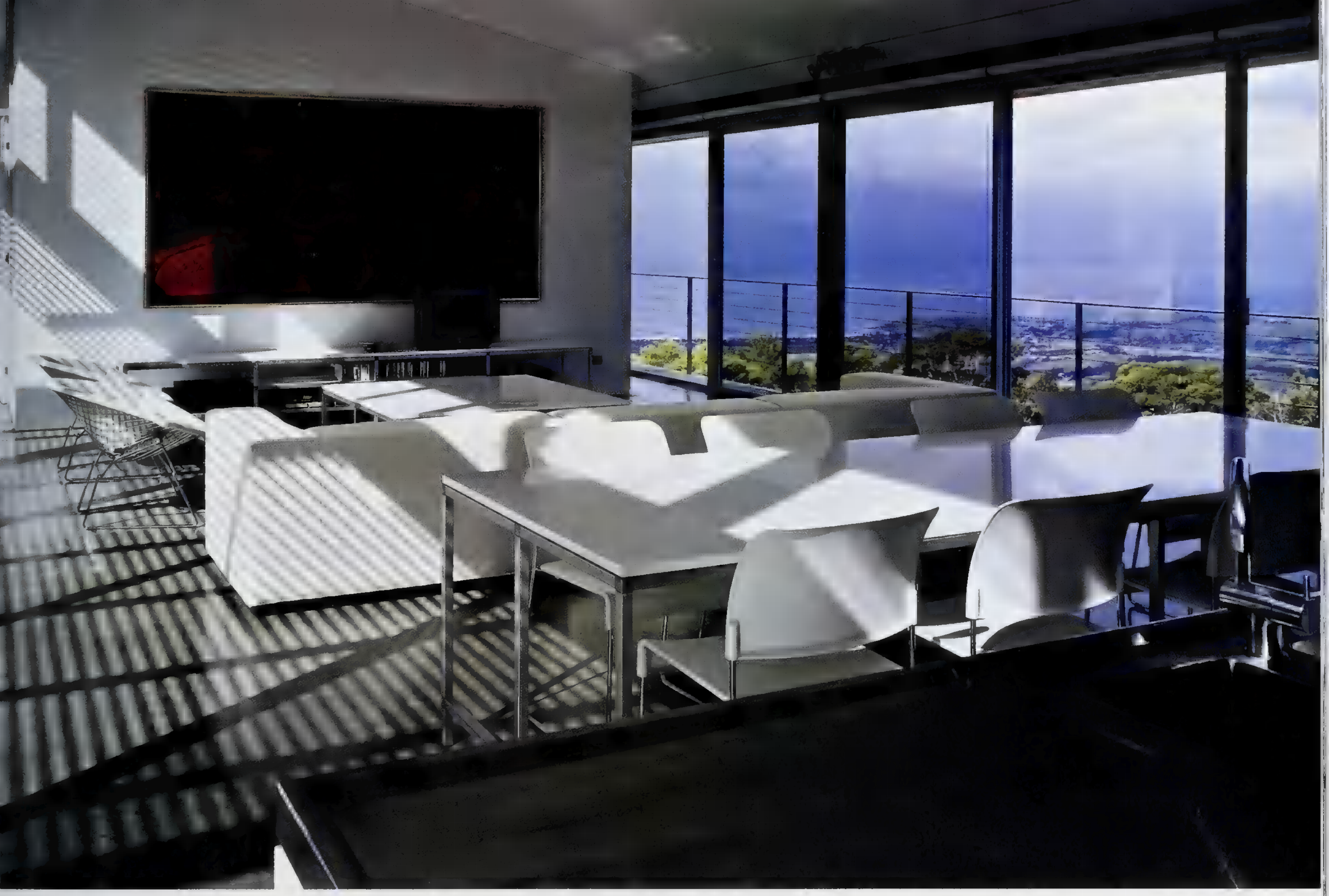


MAIN FLOOR

1. *Living*
2. *Dining*
3. *Storage*
4. *Bedroom*
5. *Master bedroom*



When sliding glass doors on the north and south sides of the house are open, the main living space can feel like a veranda. But with the blinds rolled down, the space changes into an intimate setting (above).



Saddleback Mountain and were attracted to Engelen Moore after seeing the firm's work featured in various publications. They have a keen interest in contemporary architecture and didn't want to build a timber cottage like the ones commonly found in the area.

The symmetry of the plan developed from the site, which has a broad ridge running from the top of the mountain. The architects placed the house so the land falls away roughly evenly from east and west. Then they turned one long transparent elevation to the south, where the ocean views are, and the other one to the north, with its more intimate views of the wooded hillside.

Because the house is in a geological "slip zone," some creative engineering was required. To avoid extensive and expensive foundation work, the architects minimized the building's contact with the ground by resting it on two concrete-block boxes that are visual and structural extensions of the main floor's service pods and that act as feet gripping the earth. Originally conceived as storerooms, these two lower-level spaces have since been appropriated by the clients' teenage children as their private hangouts. The house is also anchored to the site by the entry bridge, which ties to the concrete mass of the carport and driveway.

To get all of the living and sleeping spaces on one level, Engelen Moore cantilevered the main floor beyond its concrete-block "feet," using a pair of overscaled Vierendeel trusses laid like big ladders on their sides. The trusses run the length of the house and eliminate the need for diagonal bracing, which would have interfered with the views. The eight-inch-deep floor slab—thicker than usual to accommodate the considerable cantilever—sits on the two cores like a bridge. These cores, which conceal all the plumbing, leave the "fifth elevation," or underside of the house, free of exposed pipes and servicing ducts.

With its sliding doors and glass louvers on the north and east facades, this house works with nature to promote cross-ventilation and moderate interior temperatures. Louvered sun shades on the north, for example, block the summer sun here in the southern hemisphere, while the roof pitch draws the winter sun deep inside, where it warms the building's concrete slab which then distributes heat throughout the house. Radiant-heating elements in the floor also help keep the house comfortable in winter. In summer months, when the glass doors are open and the breeze is rippling through, the interiors feel like one large veranda.

While some architects use structural gymnastics to create complexity, Engelen and Moore's goal is simplicity. In the Rose House, they have employed their minimalist aesthetic and hard-nosed logic to create an uninterrupted box for living. ■

Sources

Structural steel framing: *Antax*

Concrete block: *Boral*

Profiled steel cladding: *BHP*

Sliding glass doors: *Lidco*

Adjustable glass louvers: *Breezeway*

Aluminum louvers: *John Waters*

Skylights: *Capral (St. Kilda Suite)*

Aluminum composite panels: *Symonite Australia*

Furniture: *Cappellini (Cuba sofa); Vitra (Sim dining chair); Knoll (Bertoia Diamond); Engelen Moore (easy tables and TV cabinet)*

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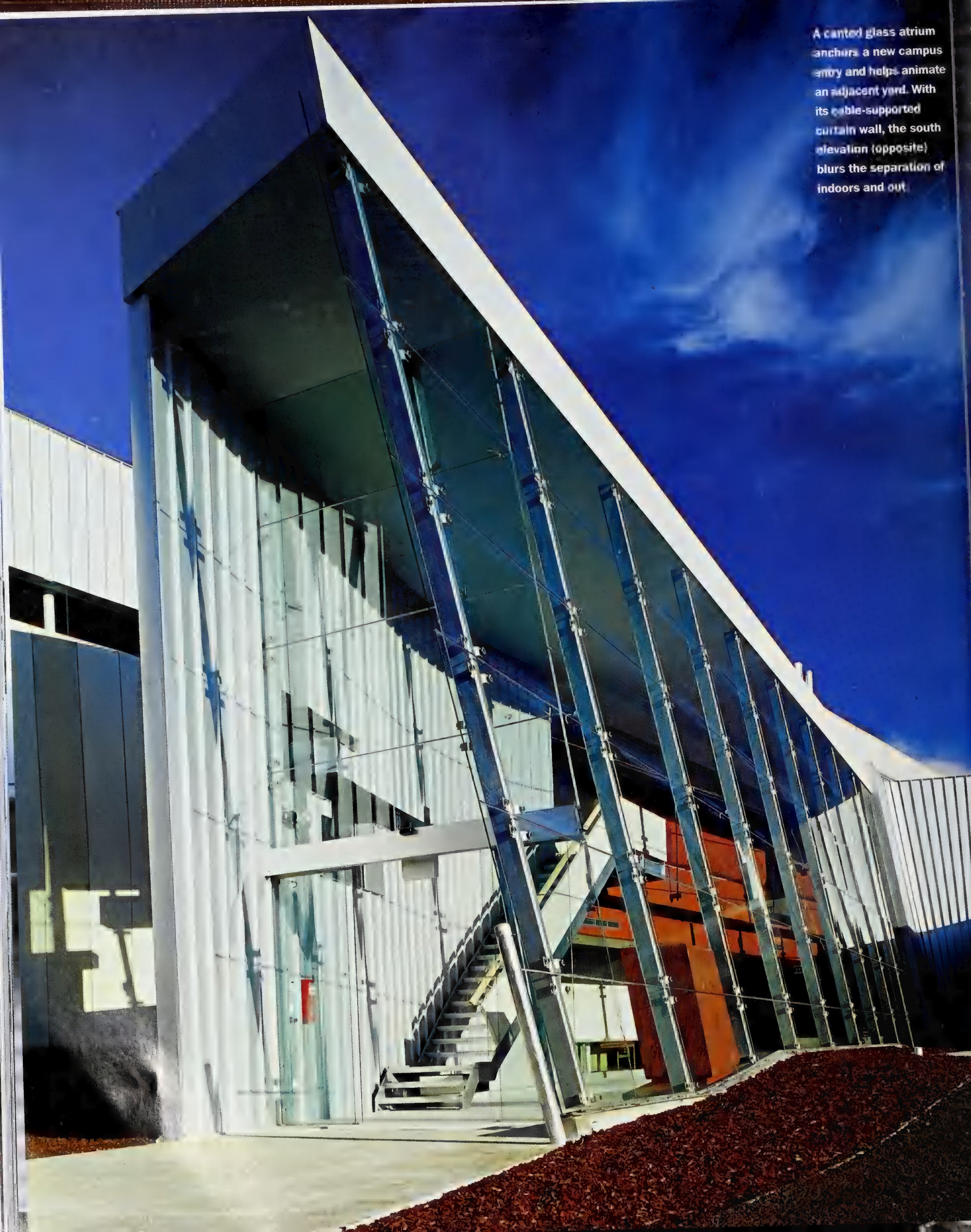
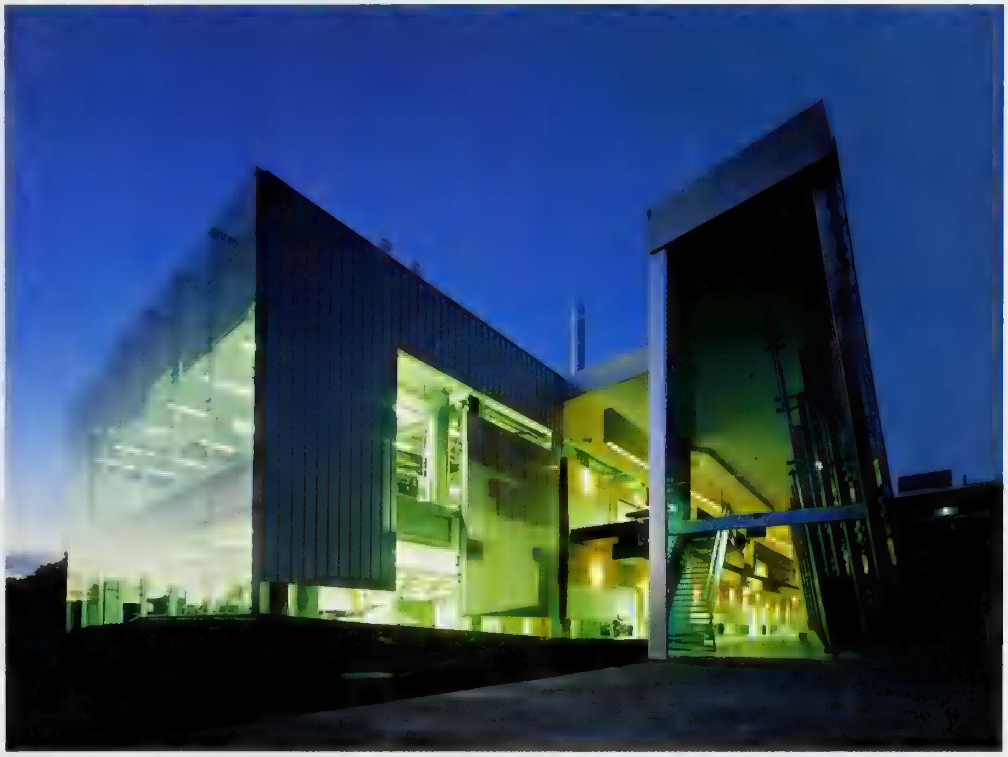


A canted glass atrium anchors a new campus entry and helps animate an adjacent yard. With its cable-supported curtain wall, the south elevation (opposite) blurs the separation of indoors and out.

John **Wardle** glorifies the industrial process in the **PRINTING FACILITY BUILDING** for the Royal Melbourne Institute of Technology

By Annemarie Kiely



Just as printed words give structure to human thought, so John Wardle's new printing facility building for the Royal Melbourne Institute of Technology (RMIT) gives shape to an academic program devoted to an industrial art form. Born of a merger between RMIT and the Melbourne College of Printing and Graphic Arts, the glass-and-metal building combines learning with the production of university literature, and the artistic with the practical. Located at RMIT's Brunswick campus, an inner-suburban locale about three miles northwest of the university's main venue in downtown Melbourne, the building helps activate a new entry to the satellite campus and an important outdoor space.

The project, designed in association with the Demaine Partnership, extends an existing printing building from 1990 and helps define the campus' western edge. The building is part of RMIT's ongoing program of commissioning innovative architecture from adventurous design practices, such as Ashton Raggatt McDougall's expressionistic renovation of Storey Hall on the university's downtown campus [NOVEMBER 2000, page 106].

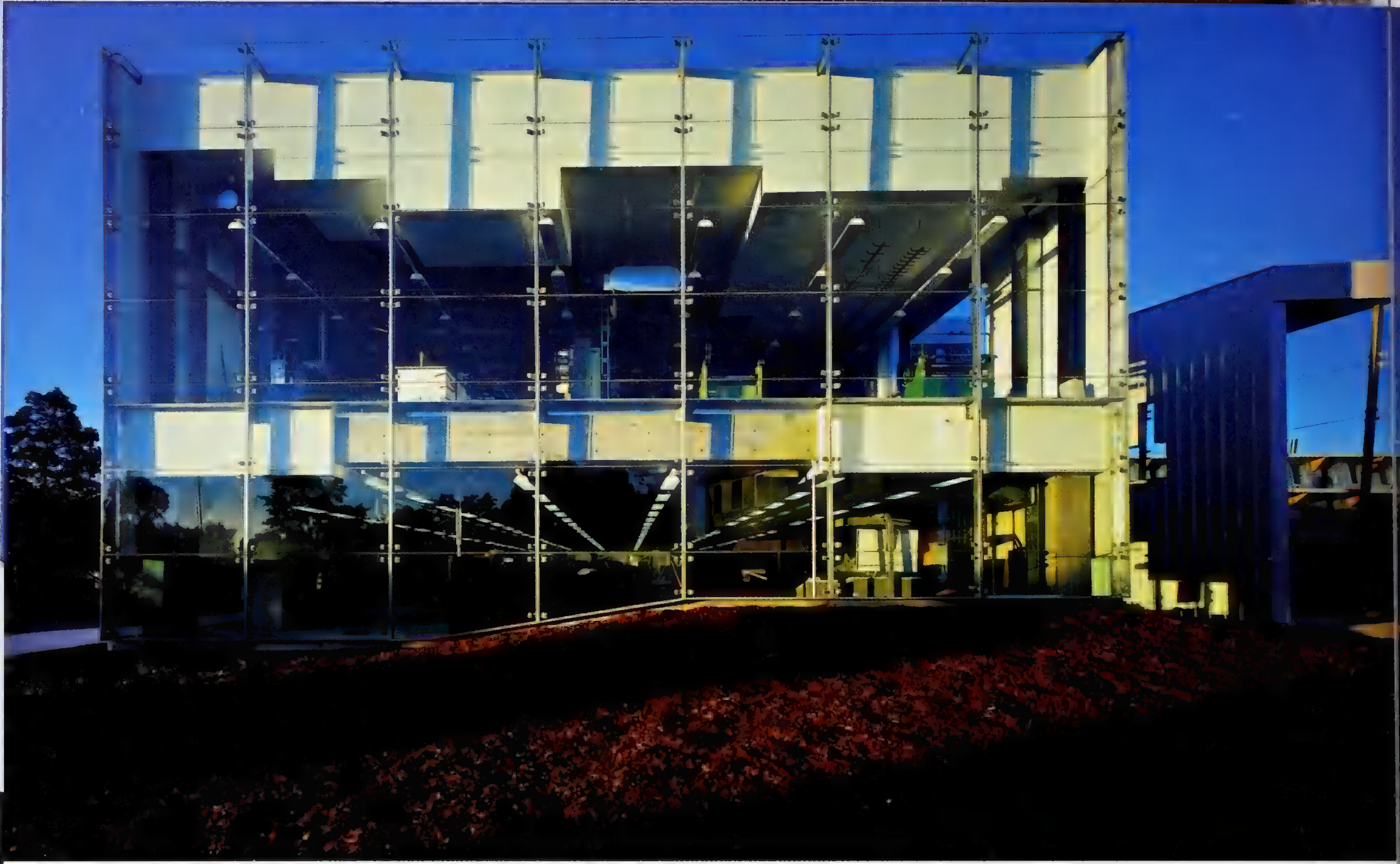
In developing his design, Wardle decided to "express the characteristics of industrial processes and put them on display." The result is an extruded two-story building, cleanly sliced at the north and south—as if by some giant machine—and then sealed with a cable-supported curtain wall at either end. Wardle's frameless, seemingly weightless glass walls are elegant reminders of how less can indeed be more. "Structure, building fabric, mechanical and electrical elements, furniture, and clear space are all expressed in cross-section profile," says Wardle of the north and south elevations. On a more practical level, these transparent ends let visitors immediately see what's going on inside while bringing daylight into large studio spaces.

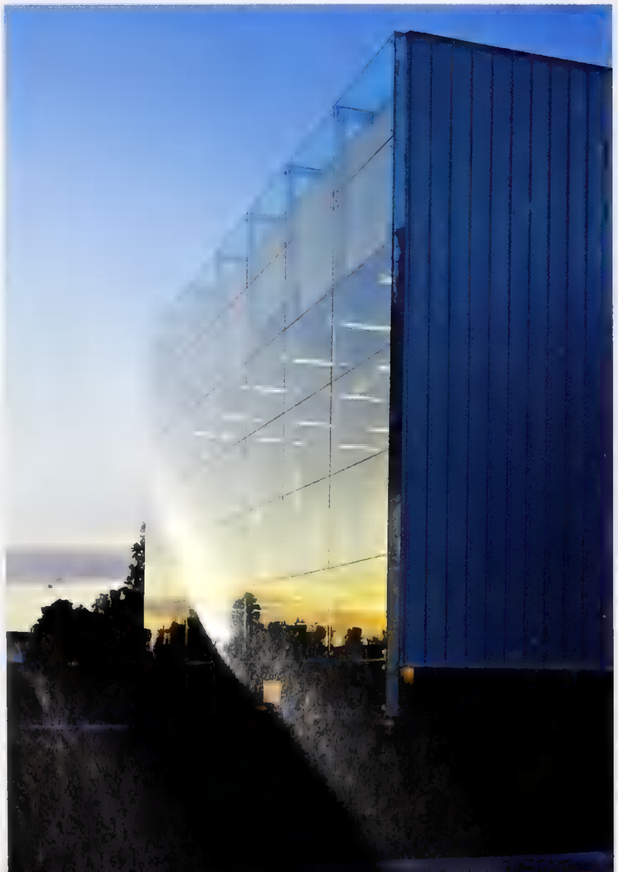
The building's long west elevation offers a striking contrast with the large precast-concrete panels resting above an uninterrupted band of ground-floor glazing. The precast-concrete panels, shaped like enormous pieces of a jigsaw puzzle, feature interlocking joints that suggest finely detailed tongue-and-groove mortises (see following page, bottom right). The solidity of the panels is broken in a few places by discrete cutouts, which offer glimpses into the work spaces inside. Speaking of the way the concrete panels fit together, Wardle says, "The idea was to express the exacting requirements and coordination [found] in many printing processes." And by showing the concrete columns set behind the elevation's glass and precast panels, Wardle expresses an architectural concern for the relationship between the alignment of the building skin over the structural grid.

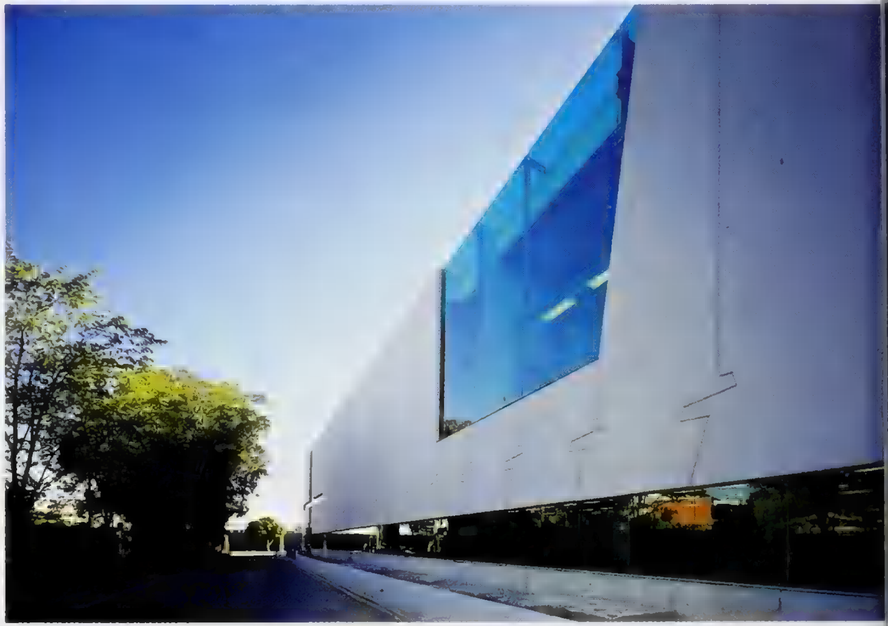
For the east side of the building facing the campus' main outdoor space, Wardle designed a sheer, two-story wall of inclined glass that

Annemarie Kiely is a Melbourne-based writer who contributes to a variety of local and international design and art publications.

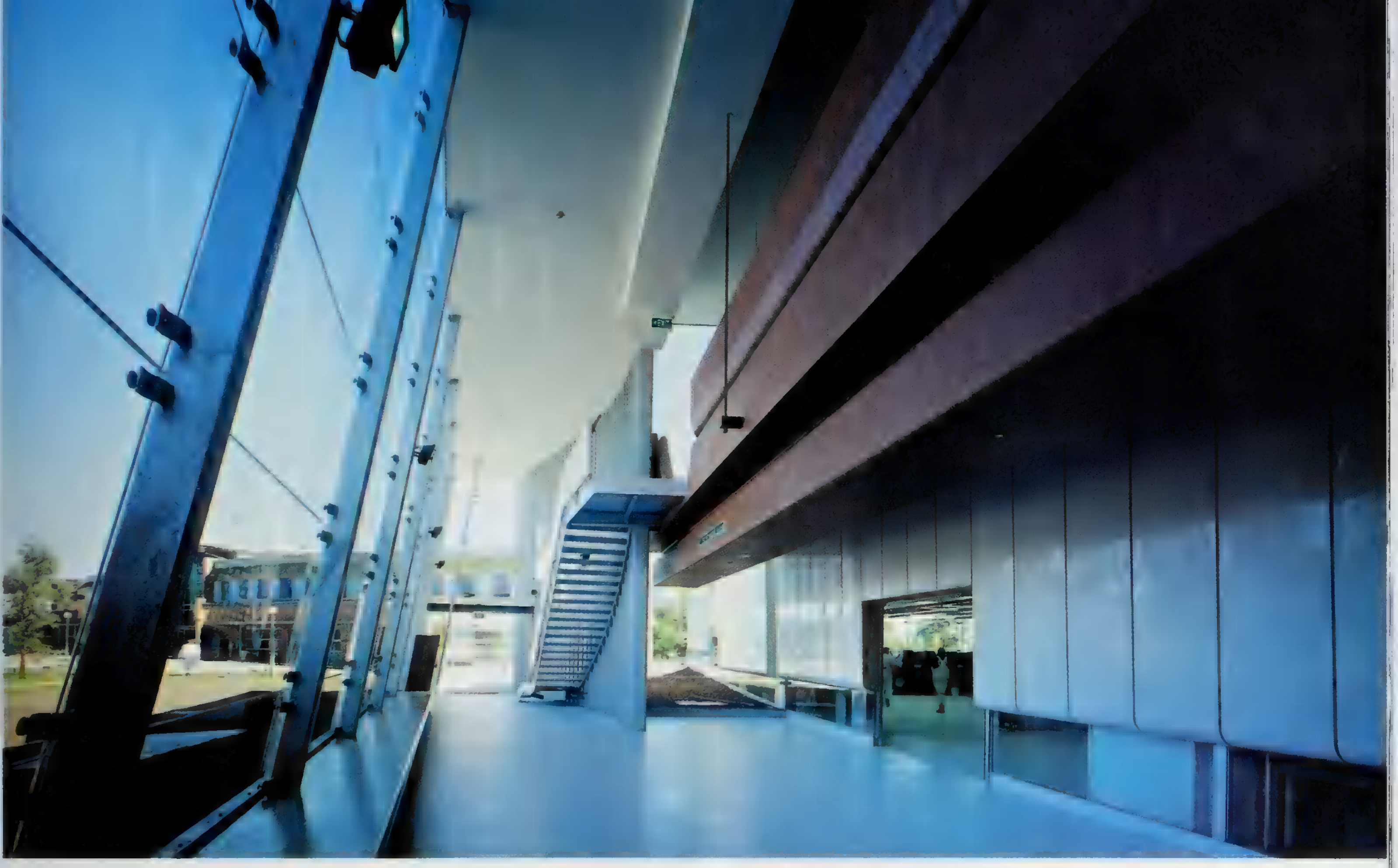
Project: *RMIT Printing Facility Building, Brunswick, Melbourne, Victoria, Australia*
Owner: *Royal Melbourne Institute of Technology*
Architect: *John Wardle Pty Ltd Architects—John Wardle, Simon Hanger, Pasquale Di Iorio, Anna Fairbank, Beatrix Rowe, Andrew Wong, Alan Driscoll, project team*
Associate architect: *Demaine Partnership Pty Ltd*
Engineers: *WP Brown & Partners (structural); O'Connor & Associates (mechanical/electrical)*
Building certifier: *Peter Luzinat & Assoc.*







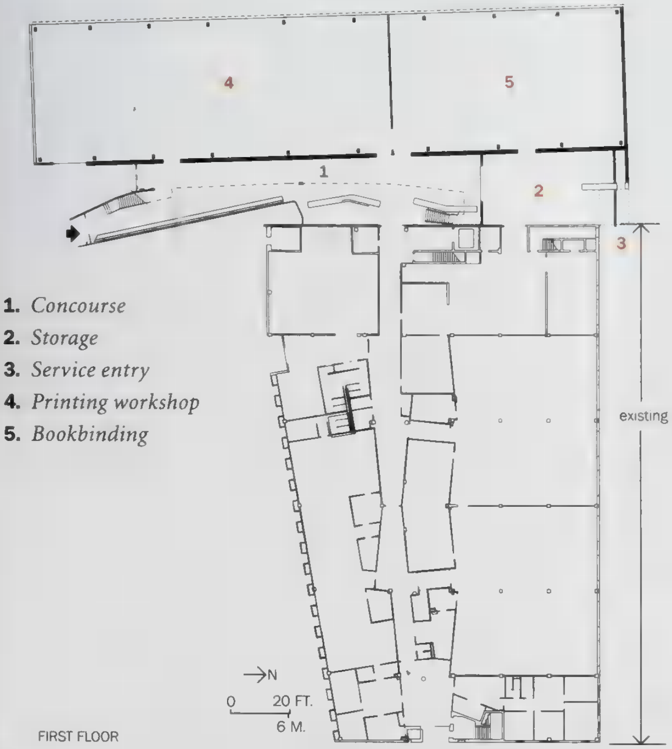
By exposing the steel frame behind the glass panes of the south elevation (top and left) and the enormous recast-concrete panels of the west elevation (above), the architects show how the building was assembled and how the skin is separate from the structure. A mezzanine running the length of the concourse (opposite) continues the theme of extruded or manufactured forms.



turns the entry atrium into a showcase of students in motion as they climb the main stair and hurry to their studios. While the north and south elevations emphasize the extruded form of the building, the east side reveals the facility as a series of distinct parts: a two-story box containing training spaces, the glazed entry atrium, and a long concourse punctuated by a suspended walkway that offers access to second-floor studios.

Inside the building, the print studios and training areas are factorylike: large open spaces with epoxy-coated concrete floors and exposed mechanical and electrical systems hanging from the ceiling. The sense of industrial production is brought inside with molded pearlescent fiberglass panels on the workshops' walls and an elongated mezzanine walkway wrapped in rust-orange linoleum.

With its engaging glass atrium and muscular forms, Wardle's building has helped revitalize the Brunswick campus and raise the profile of the school's printing program, states David Beanland, who was the university's vice chancellor during the project. In its edgy linear forms and machined materials, the building expresses the culture of printing, while its transparent east elevation makes knowledge visible and accessible to all. ■



1. *Concourse*
2. *Storage*
3. *Service entry*
4. *Printing workshop*
5. *Bookbinding*

FIRST FLOOR

Sources

Steel-and-glass curtain wall : *Custom by Lysaght Brownbuilt*

Acid-etched precast-concrete wall panels: *Fabcon*

Structural glazing system: *Glass by DMS*

Fiberglass wall panels: *Bob McWilliam Plastics*

Plasterboard: *Boral*

Resilient flooring and mezzanine bench: *Marmoleum*

Low-sheen acrylic paint: *Dulux*

Joinery and high-density laminate: *Constructed by Adam Brothers*

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CIRCLE 46 ON INQUIRY CARD

PERFORMING ARTS

The Next Stage

FROM A MUSIC TENT TO A REBUILT CONSERVATORY CAMPUS, RECENT CONCERT VENUES ENGAGE PERFORMERS AND PATRONS.

By William Weathersby, Jr.

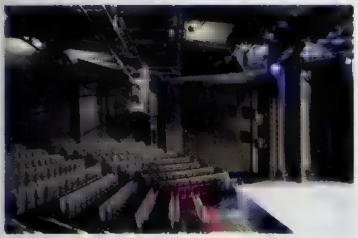
"What makes a great theater is a mystery," says director and writer Emily Mann. "It is not about a beautiful lobby or beautifully treated walls or even the shape of the auditorium. It takes wizardry to make a haunted, electric, living theater." Clearly, the sustaining alchemy of live performance—whether music, dance, or spoken word—lies in the successful connection forged between performer and audience. Patrons gather in the dark to suspend disbelief, surrender to a journey, celebrate a culture. Much of the magic is set into play by the onstage actors or musicians, but what if the sound of the strings is lost to the rafters, or a neighbor in the next row is fidgeting in a squeaky, cramped seat? Clearly, the environmental setting is crucial to the success of this ephemeral shared experience.

Addressing the requirements of both performers and patrons is a particularly collaborative art. Architect, acoustician, engineer, theater consultant, artistic director, and operator tweak plans and materials to ensure that the comfort zone carries across both sides of the footlights or orchestra pit. Long overlooked, backstage amenities for staff and crew are joining public spaces like restaurants and gift shops on the theater programming punch list.

Pragmatically, theater design and construction continue to perform well. According to F.W. Dodge, total domestic construction of the building sector (which includes cinemas as well as performance stages in the Theater category) reached 9.8 million square feet in 2000, with a recent high in 1998 of 17.5 million. Municipalities of every size—from Dallas and Miami to Columbus, Ga., and Madison, Wis.—are investing in major new civic facilities to support the performing arts. Representing a landmark leap of faith, the overhaul of the infrastructure and amenities of New York City's Lincoln Center will tally more than $1 billion and stretch across the better part of the next decade. Within a few years, opera, ballet, and symphony patrons on the way to their seats at Lincoln Center may be dazzled by the procession of arrival. If current plans under discussion proceed, a three-pronged, birdlike canopy of glass designed by Frank Gehry may swoop down toward the street. Meanwhile, Jean Nouvel is directing the redesign of a renowned regional showcase, the Guthrie Theater in Minneapolis.

Our latest project survey illustrates the variety of size and scale, moods and methods, found in current spaces designed for the performing arts, in this case venues mostly meant for music. More current work by marquee names is on our Web site.

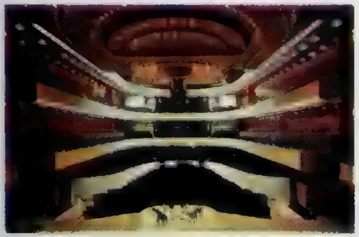
Contributing editor William Weathersby, Jr., is a writer based in Westport, Conn.



1.

Pont-Audemer, France

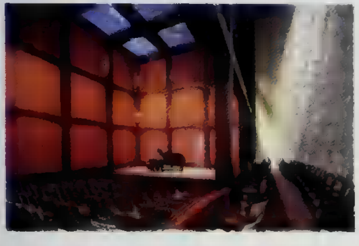
Jakob + MacFarlane gives a small-town theater new life with a sleek curtain wall wrapped around newly configured interior spaces.



2.

Lahti, Finland

An unusual set of design mandates called for creative reuse of a harbor-side factory, with new construction featuring innovations in wood.



3.

Cincinnati, Ohio

Pei Cobb Freed & Partners teams with NBBJ/Roth to enhance a college conservatory of music with fine-tuned performance spaces.

4.

Aspen, Colorado

For a revered summer music festival, Harry Teague orchestrates a third-generation performance tent with upgraded acoustics.

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Théâtre L'Eclat
Pont-Audemer, France

1

JAKOB + MACFARLANE CLOAKS A 1960S BRUTALIST BOX WITH A VIBRANT CURTAIN WALL TO REINVIGORATE A COMMUNITY THEATER IN NORMANDY.

By Claire Downey

Architect: *Jakob + MacFarlane—Dominique Jakob, Brendan MacFarlane, principals; Patrice Gardera, assistant*
Client: *City of Pont-Audemer*
Consultants: *Scene (theater consultant); Commins Acoustics Workshop (acoustician); ITEC Engineers (engineers)*

Size: *17,120 square feet*
Cost: *$1.9 million*
Completion date: *2001*

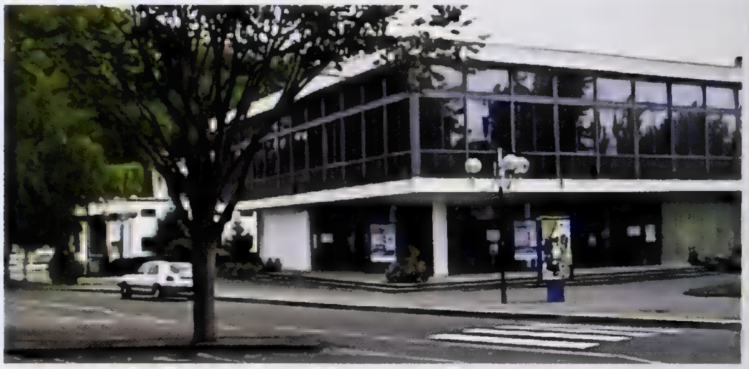
Sources
Seating: *Mussidan*
Architectural lighting: *Erco, Mazda*
Acoustical wall: *Placoplatre*
Glazing: *Staba*
Sliding stage doors: *Algaflex*

Program

Big theaters don't necessarily put small towns on the map. The city of Pont-Audemer, north of Paris in the Normandy countryside, wanted to scale back its 800-seat theater to make it more intimate while increasing its functional capabilities. Launching a competition in 1997, city officials chose Paris-based architects Dominique Jakob and Brendan MacFarlane well before the duo had completed their innovative design for Georges, the restaurant atop the Centre Pompidou [SEPTEMBER 2000, page 128]. For the Théâtre L'Eclat, the architects carried out a radical intervention, removing all but the rough concrete bones of the 1960s structure and replacing its vital organs from the inside out.

Pont-Audemer is a charming, provincial town of many cross-timbered houses bordered by canals, vestiges of medieval tanneries. The existing theater, designed by Maurice Novarina, was built aside the Risle River. An earlier theater on the same site was destroyed during World War II; before that, ancient fortified walls followed the river.

Far from assimilating any trace of the town's history, Novarina's theater was fairly brutalist: a glass-and-concrete box raised above a concrete slab. The auditorium took up the entire second floor, with seating running right up to draperies cloaking the perimeter glass walls. "When it got too hot," says MacFarlane, "patrons would open a window, which of course ruined the acoustics."



Solutions/Intentions

The main objectives of the recent renovation were to improve acoustics, add programming flexibility, and downsize the auditorium. The original 800 seats were rarely filled, and the corner stage position precluded many music and dance productions. The new configuration had to accommodate varied forms of spectacle—from choral recitals and piano concertos to hip-hop and film projections. The program also required a lobby bar, bathrooms, and offices. The dressing rooms, a further enhancement, were placed below the stage and now are

RECORD contributing editor Claire Downey is a writer based in Paris.

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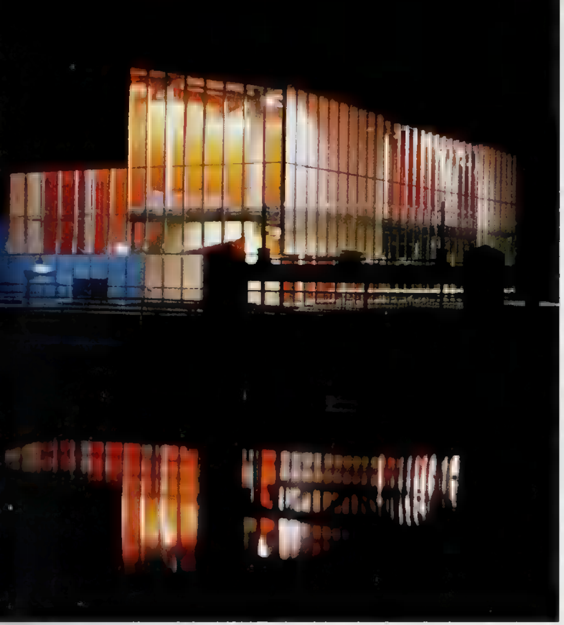
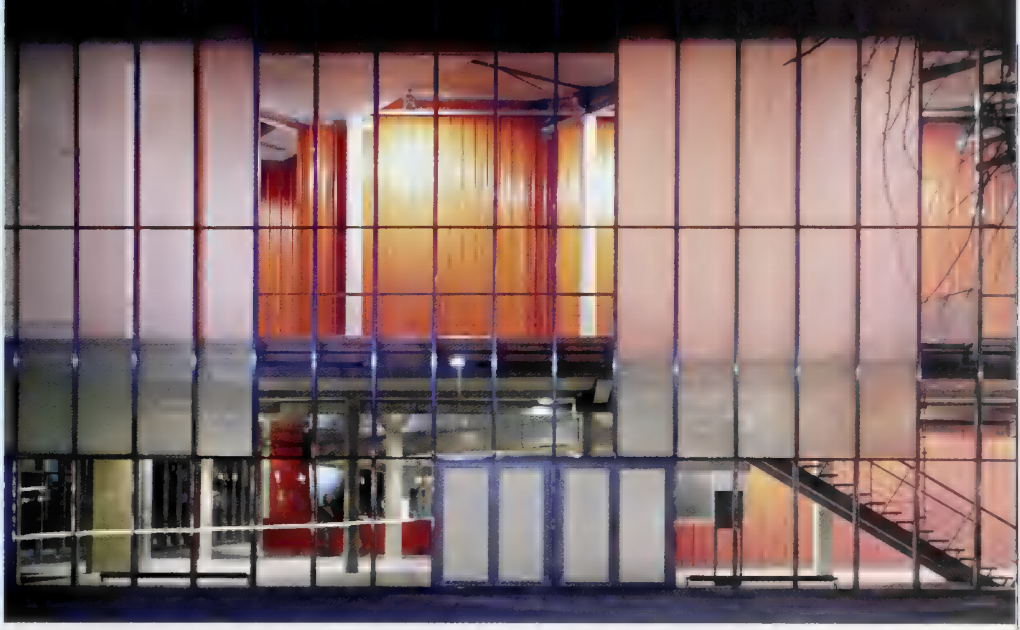
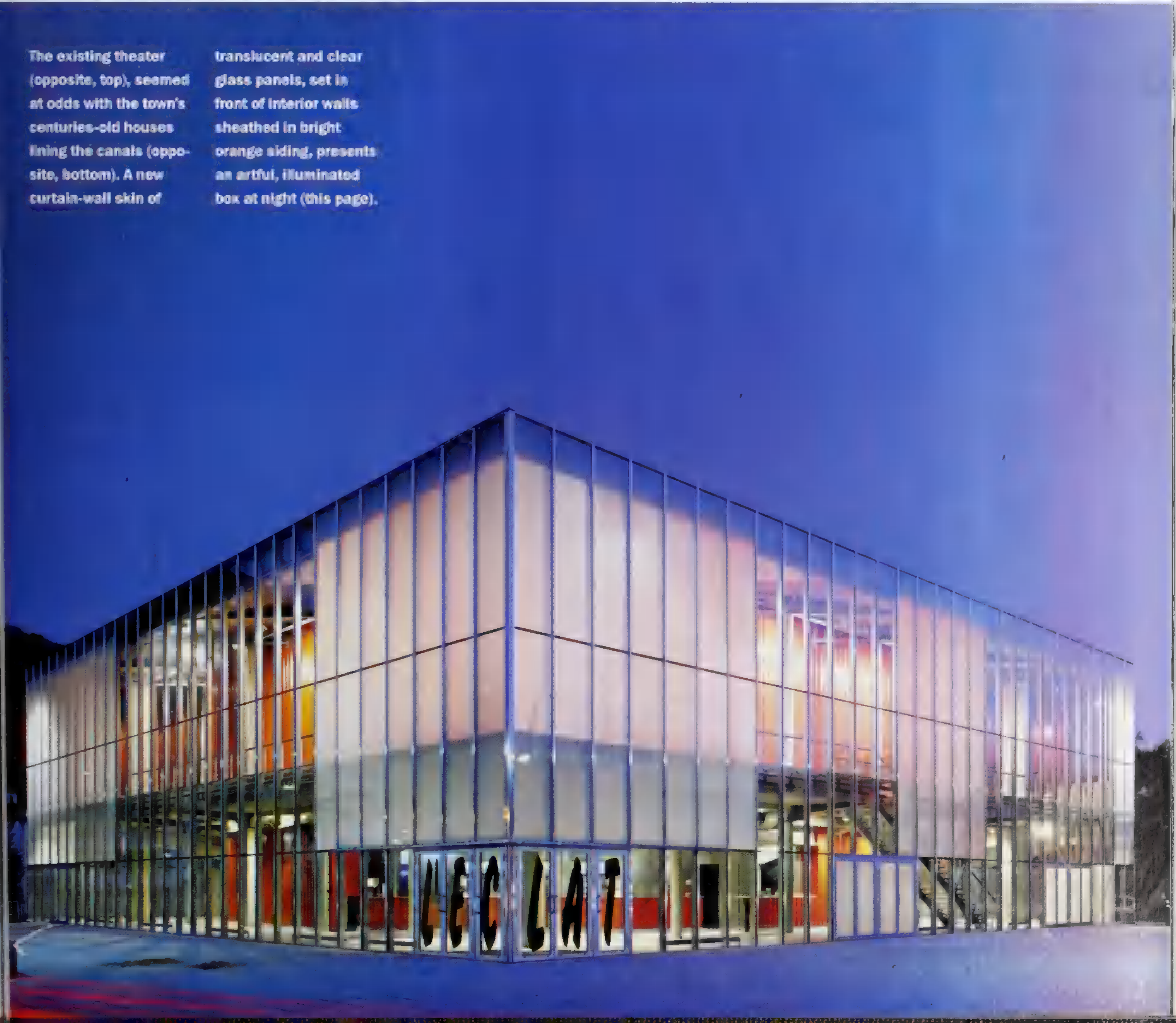
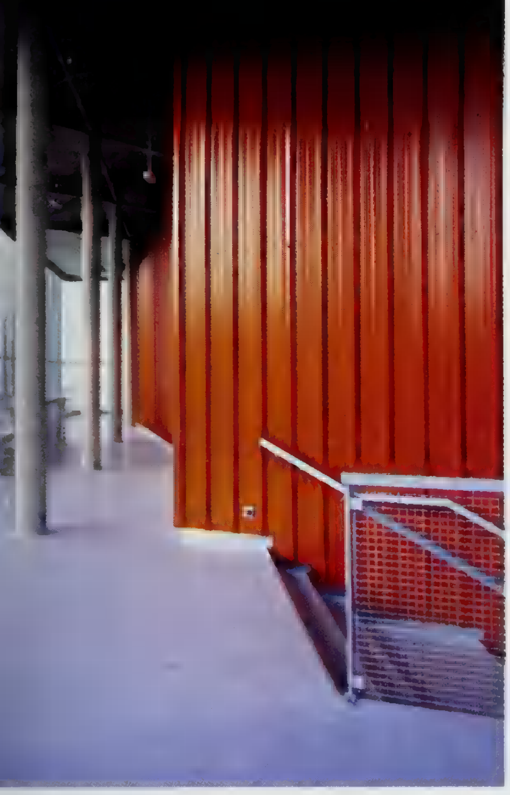


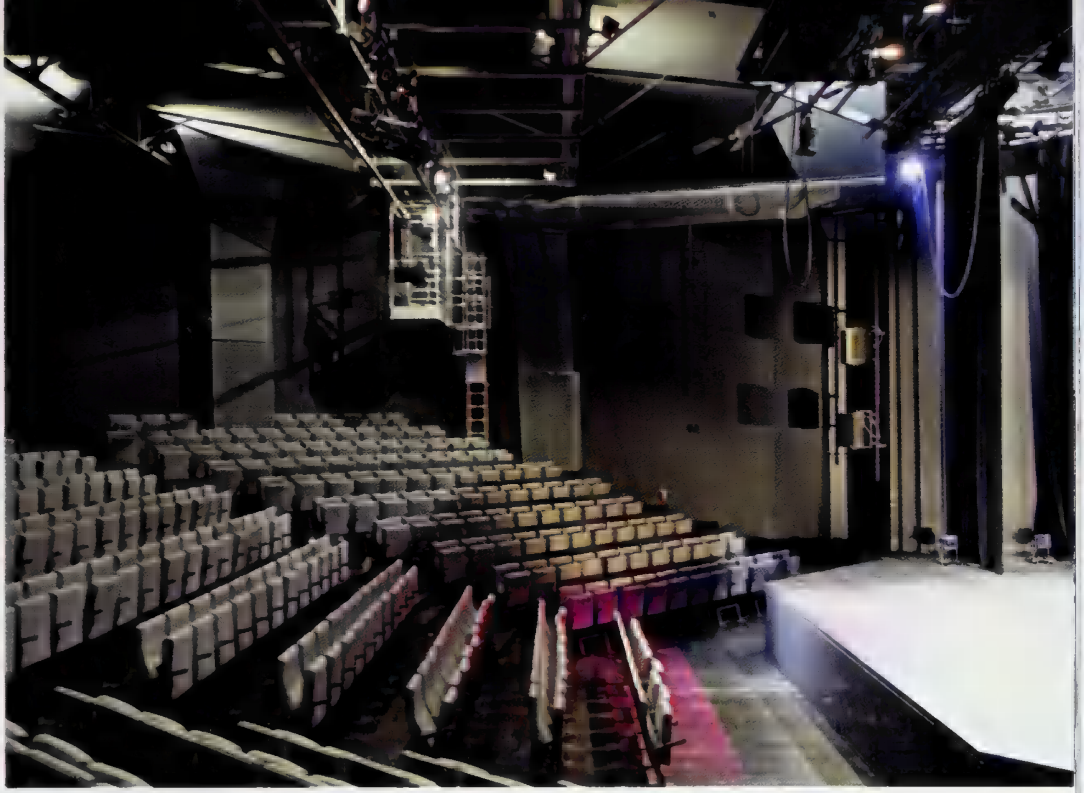




The existing theater (opposite, top), seemed at odds with the town's centuries-old houses lining the canals (opposite, bottom). A new curtain-wall skin of translucent and clear glass panels, set in front of interior walls sheathed in bright orange siding, presents an artful, illuminated box at night (this page).

Metal siding and stairs allude to forms and materials found in the region's agricultural buildings (above and below). The curtain wall was brought down to street level to enclose interior spaces. The auditorium has fewer seats and is enclosed by walls that mask HVAC units (opposite, right).





accessed by a narrow spiral staircase at the rear of the stage.

Jakob + MacFarlane chose to retain the corner stage but double its depth by adding a 24-foot extension that projects into the room. A new proscenium is composed of collapsible, rectangular segments that can be removed and stored beneath the stage.

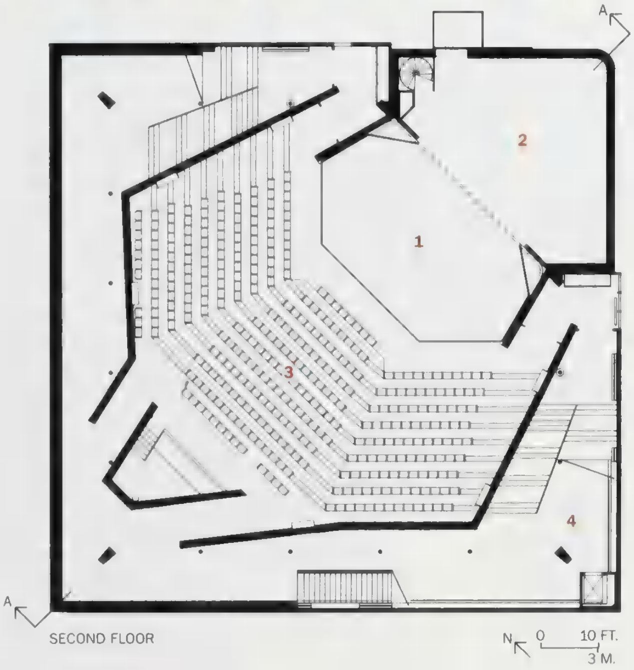
One dramatic change was the creation of an 18½-inch-thick acoustical wall to enclose 360 seats arranged concentrically in the redesigned auditorium. This new interior shell gives the room intimacy. It also creates a separation between the auditorium and the second-floor lobby, while supporting heating and air-conditioning units.

The entire auditorium—from floor to ceiling, walls to seating—is enveloped in shades of slate gray. The dark floors are painted, waxed oak. Chairs feature wooden armrests to aid sound absorption. On the ceiling, acoustic panels are set between exposed structural elements. Though austere, the overall effect is surprisingly warm. "The auditorium has to be accessible to a wide public," explains MacFarlane. "It had to be popular, not precious."

Welcoming a broader audience also meant bringing the building facade down to meet the plaza. Even the corner entrance, with its supermarket-inspired lettering, points toward the town center. The full-height skin of transparent and opaque glass employs a German glazing system in which vertical structural mullions allow a minimum of horizontal breaks. With only silicone joints separating the glass panels, which alternate from 39 to 47 feet high, the facade appears detached from the building behind it, like a curtain stretched across a stage. With the ground floor now completely enclosed, the city also has a new space that can be rented for exhibitions or events.

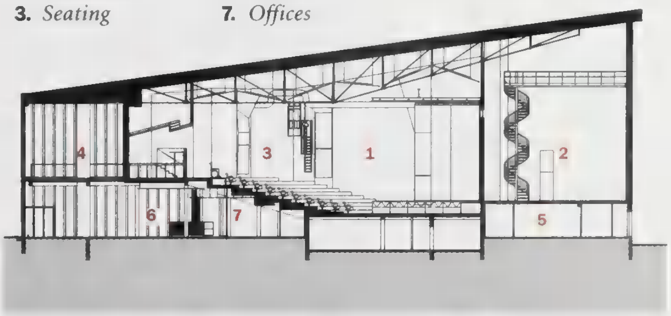
Commentary

Inside, the facade's frosted glass panels are positioned across from auditorium exits so that, post performance, patrons' eyes do not immediately confront the outside world. The only subtle shock comes from orange metal siding used to clad the ticket desk and lobby walls. The siding is the same type that wraps local farm buildings, albeit in a brighter shade here. For Jakob + MacFarlane, this inexpensive, stock material "connotes a work site, which nicely parallels the activity of creation found within the theater." ■



SECOND FLOOR

1. *New stage*
2. *Original stage/ backstage*
3. *Seating*
4. *Enclosed walkway*
5. *Dressing rooms*
6. *Tickets*
7. *Offices*



SECTION A-A

Sibelius Hall
Lahti, Finland

2

HANNU TIKKA AND KIMMO LINTULA BUILD A HANDSOME CONCERT HALL ON THE WATERFRONT, A WELL-MADE WOODEN VESSEL ENCASED IN GLASS.

By Peter MacKeith

Architect: *Artto Palo Rossi Tikka Architects—Hannu Tikka, Kimmo Lintula, project architects*
Client: *City of Lahti*
Consultants: *Artec Consultants (acoustician); Turun Juva Oy (structural engineer); Yap Oy Kari Majala (electrical engineer); Markku Liukkonen (interior design); VTT Building Technology*

Size: *142,300 square feet*
Cost: *$20 million*
Completion date: *2000*

Sources
Acoustic walls and ceilings: *SPU Systems*
Wood: *Kerto-LVL, Finnforest Corporation, Schauman Wood Oy*
Dowel joints, laminated beams: *Vierumäen Teollisuus Oy*

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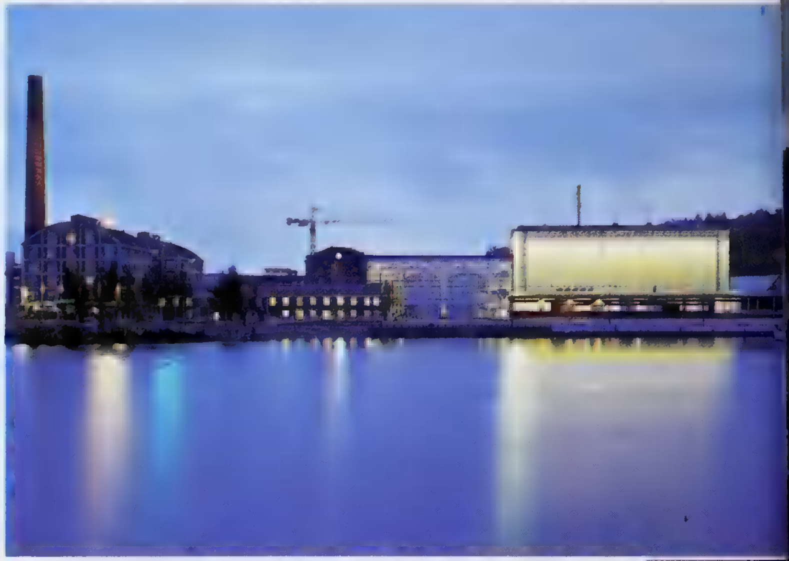
For additional performing arts projects and more information on the people and products involved in this project, go to Building Types Study at **www.architecturalrecord.com**

Program

Raising his baton in Sibelius Hall, conductor Osmo Vänskä commands the attention of the 60-member Lahti Symphony Orchestra and quiets the murmurs of a full house of 1,250. The moment of silence is absolute and deep, signaling a convergence of refined acoustics, civic pride, and architectural achievement. The complex, designed by Hannu Tikka and Kimmo Lintula of the Finnish firm Artto Palo Rossi Tikka, overlooks the Lahti harbor on Lake Vesijärvi. The handsome composition juxtaposes a rehabilitated 1907 brick factory building and two new glass-sheathed boxes that enclose intricate wood space frames. Quietly monumental, the new hall is already regarded as the premier musical performance space in Finland and caps a concerted effort to revitalize the once downtrodden waterfront district.

The international renown of the orchestra belies its home in the provinces. Sixty miles northeast of Helsinki, Lahti has been a hub of commerce for the past century. The forestry industry capitalized on the waterways as a timber-floating route, on the city's many sawmills and joineries, and on its access to St. Petersburg and Helsinki railheads. Gripped by a recession a decade ago, however, the city has sought to diversify its economy and reinvent itself as a center of culture, sports, and business.

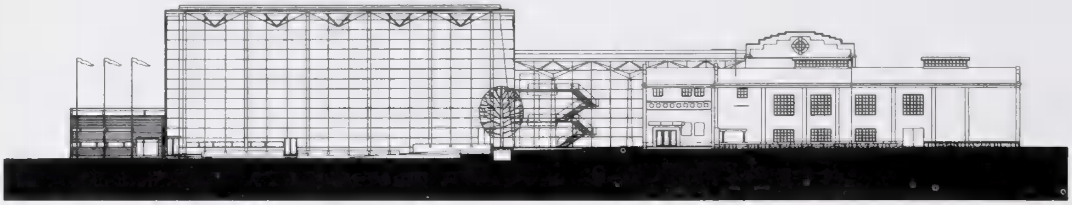


The 50-year-old orchestra's rise to prominence, meanwhile, took flight with the appointment of conductor Vänskä and general manager Tuomas Kinberg in 1985. The orchestra's successful recordings of the overlooked works of Finnish composer Jean Sibelius also fueled a drive to construct a new symphony hall. This momentum dovetailed with the civic redevelopment plans, while the national government was aligning with forestry concerns to create a public flagship as a showcase for Finnish wood in design and construction.

Solutions/Intentions

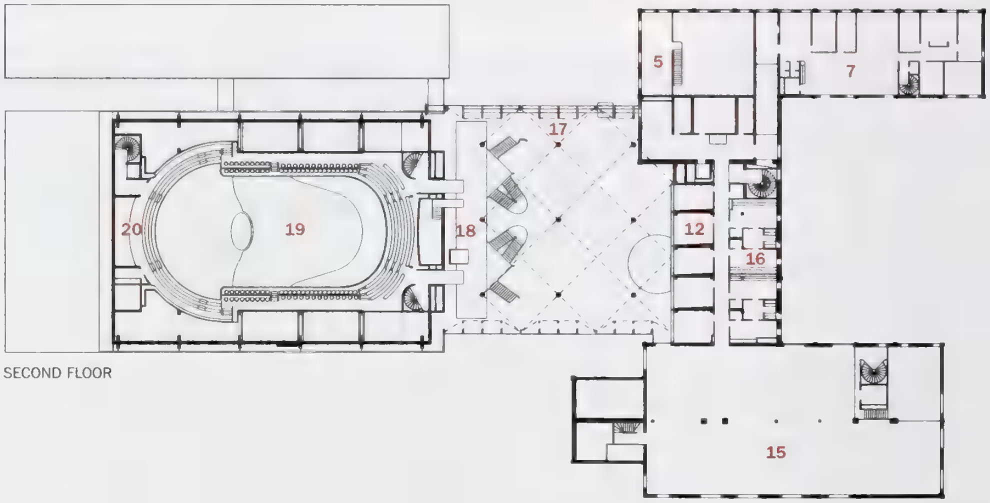
The 1997 design competition for a Lahti congress and concert hall set forth goals of architectural quality, acoustical excellence, innovation in

The civic complex orchestrates a historic brick-clad furniture factory and new curtain-wall structures. Forest Hall, a lobby and reception space (right), serves as a unifying core that conveys the feeling of a Finnish forest with glue-laminated timbers and trusses.

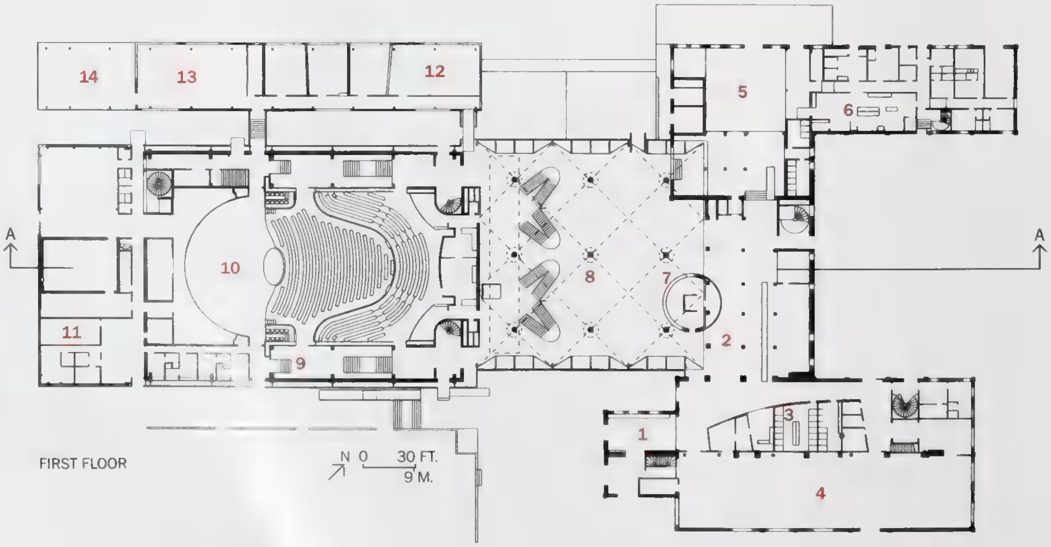


SECTION A-A

1. *Main entrance*
2. *Lobby*
3. *Tickets/shops*
4. *Exhibition/joinery*
5. *Restaurant*
6. *Kitchen*
7. *Office*
8. *Forest Hall*
9. *Acoustic chambers*
10. *Auditorium*
11. *Conductor's suite*
12. *Rehearsal rooms*
13. *Artists' foyer*
14. *Covered terrace*
15. *Exhibition/function*
16. *Dressing rooms*
17. *Wooden bridge*
18. *Gallery*
19. *Balcony*
20. *Choir gallery*



SECOND FLOOR



FIRST FLOOR

wood construction, and civic presence. New York acoustician Russell Johnson of Artec Consultants was retained by the city to ensure the acoustical viability of entries; the firm later expanded its role as a project consultant.

Each of the four short-listed teams was paired with a general contractor to refine schematic designs and develop the mandated wood construction technologies. Finalists also had to meet stringent budget targets; the city would fund nearly half of the final $20 million cost, with the remainder divided among the Finnish state, corporate supporters, and the European Union.

Tikka and Lintula's design was awarded first prize on all counts. The architects realized early on that relying upon the aging brick factory building alone to house a world-class concert hall was not feasible. Instead, their plan places arrival, support, and public spaces in the more cellular masonry structure. The symphony chamber was conceived as a new, distinct volume on the lakefront, a well-made wooden vessel encased within a glass vitrine. Joining the old and new is a grand public foyer, the glass-enclosed Forest Hall, dominated by a grid of towering laminated-wood columns that support a dramatic canopy of splayed "branches." Two additional wings support backstage functions and conference areas.

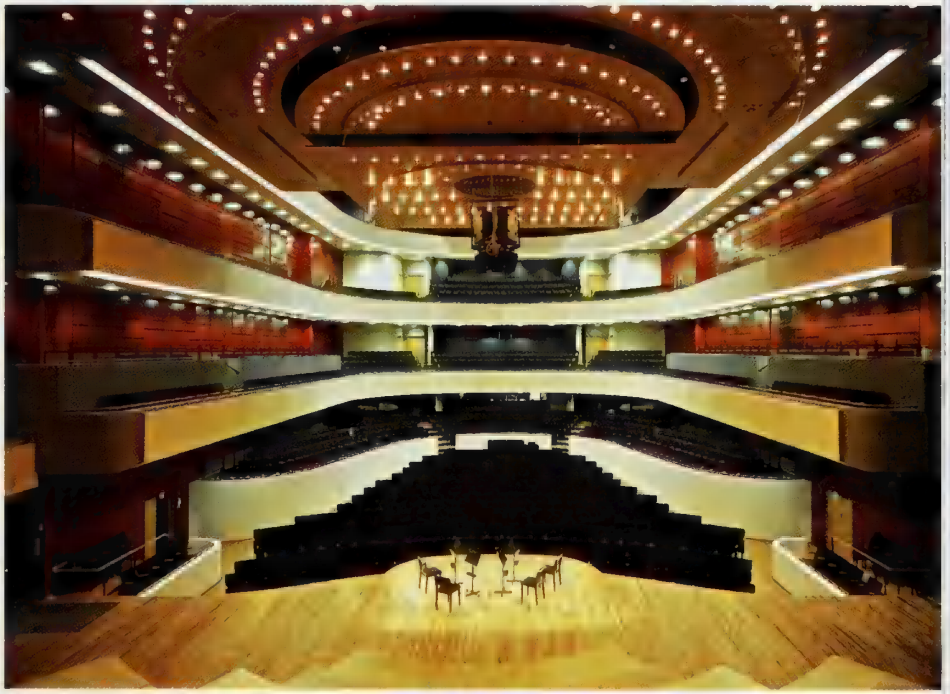
Commentary

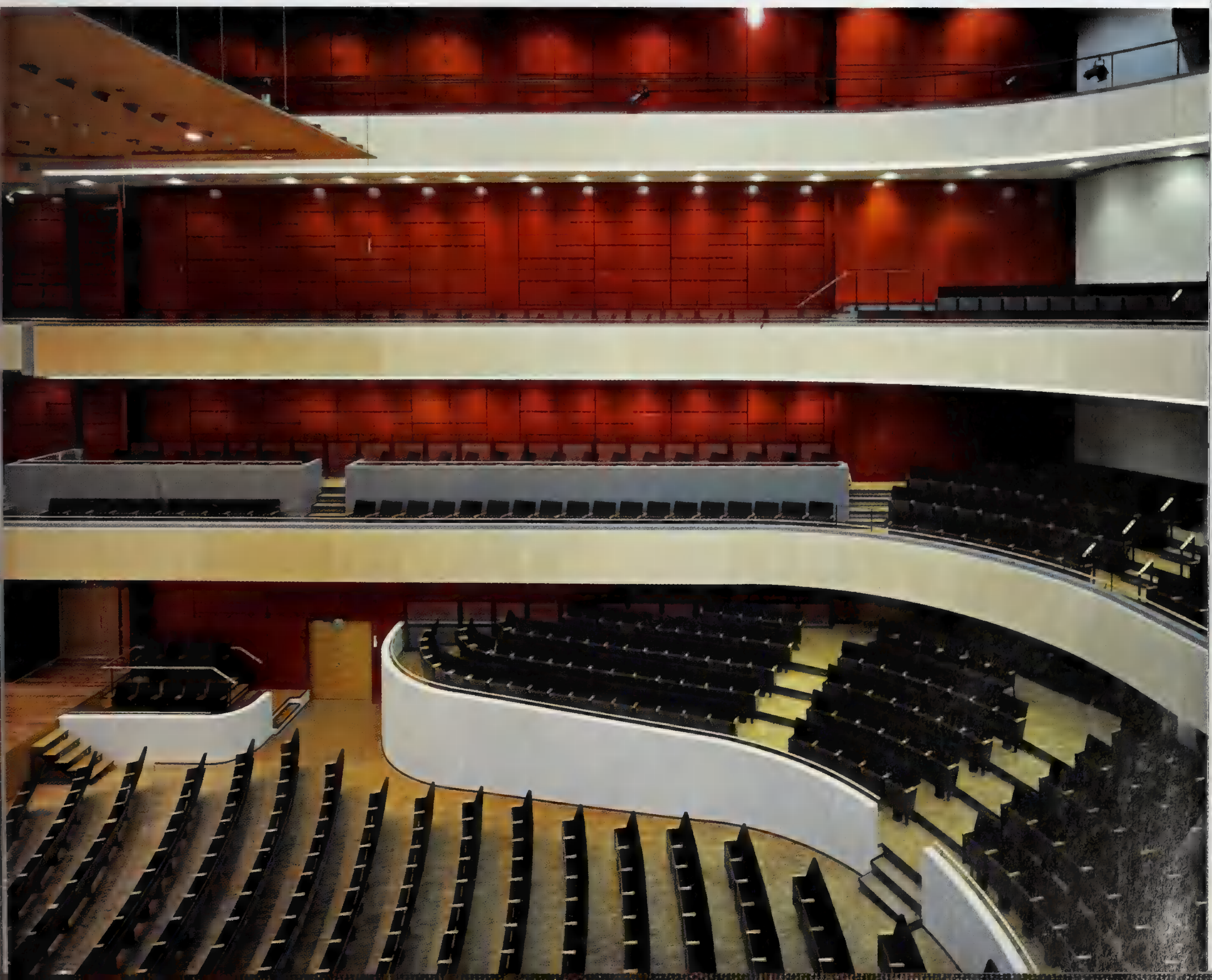
The architectural composition enhances the cityscape: The harborfront has gained a striking and symbolic anchor. Not every elevation is engaging, however, as the necessities of backstage service are exposed to the general line of entry through a parking lot. The former factory structure does possess a new dignity, acting as the primary entrance into the entire complex.

With discipline and flair, the orchestra's new home tangibly addresses the legacy of its namesake native son, Sibelius. It also engages and supports the talented musicians and wide audience welcomed within. ■

PHOTOGRAPHY: © STUDIO VOITTO NIEMELÄ

Adopting the classic shoebox configuration of revered symphony halls, the architects set a long and narrow auditorium within a larger rectangular volume (right and below). Side walls feature wooden doors that are computer-controlled to adjust the acoustics of the chamber to suit varied music types. Public spaces showcase Finnish wood construction (left).





University of Cincinnati
Cincinnati, Ohio

3

PEI COBB FREED & PARTNERS TRANSFORMS THE COLLEGE-CONSERVATORY OF MUSIC, GIVING DISPARATE BUILDINGS A UNIFIED IDENTITY.

By William Weathersby, Jr.

Architect: *Pei Cobb Freed & Partners Architects—Henry Cobb, FAIA, partner-in-charge; George Miller, AIA, partner/management; Charles Young, Thomas Baker, Richard Diamond, Eric Schiller, Campari Knoepffler, Baker Goodwin, Susan Lowance, Libby Polenz, project team*
Associate architect: *NBBJ/Roth*
Client: *University of Cincinnati*
Consultants: *Theater Projects Consultants (theater); Kirkegaard & Associates (acoustician); Olin Partnership (landscape); Fisher Marantz Stone (lighting); THP Ltd. (structural engineer); Korda/Nemeth Engineering (MEP engineer); Shen Milsom & Wilke (audiovisual)*

Size: *146,870 square feet (new construction); 137,900 square feet (renovation); 400-car garage*
Cost: *$93.2 million*
Completion date: *1995–99*

Sources
Aluminum, curtain wall: *EFCO*
Masonry: *The Belden Brick Co.*
Brick pavers: *Pine Hall Brick*
Elevators: *Dover*
Carpet: *Lees Commercial Carpets, Atlas Carpet Mills*

WWW
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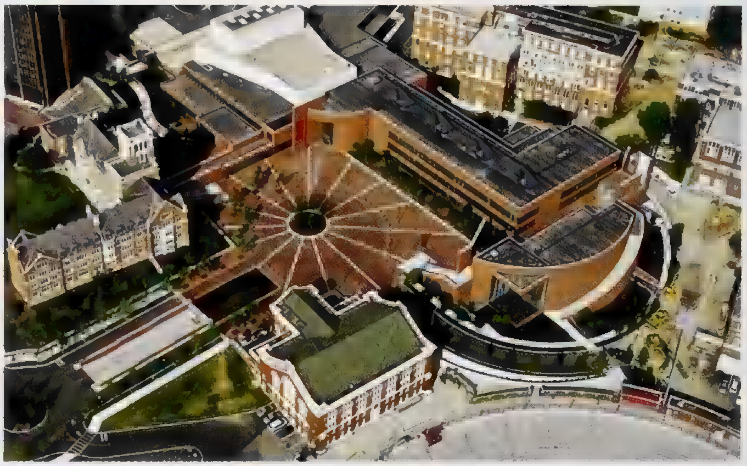
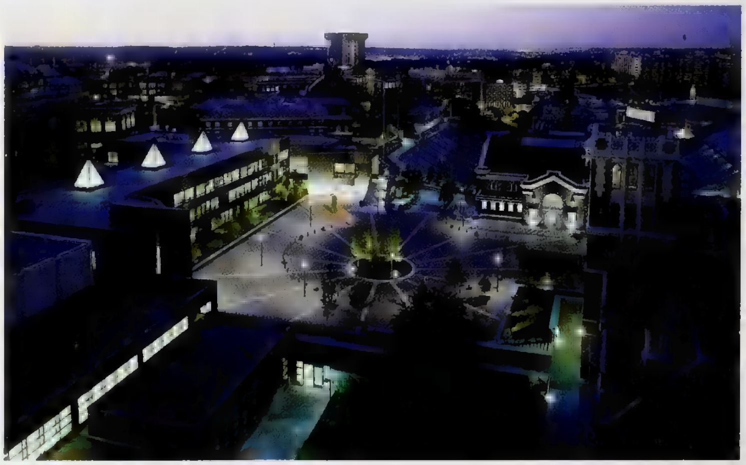
Program

The sprawling campus of the University of Cincinnati encompasses a remarkable breadth of architectural audacity: the architecture school by Peter Eisenman, a biotechnology building by Frank Gehry, the physics center by Michael Graves, and soon-to-open expansions by Gwathmey Siegel and Leers Weinzapfel. A decade ago, amid these architectural gems, the university's College-Conservatory of Music was an aesthetic backwater. "Arriving on campus in the early 1990s, I was enchanted by the life and creativity of the music school, but appalled by its physical conditions," says Henry Cobb, FAIA.

The conservatory comprised squat 1960s boxes clad in precast concrete. The dull enclave was squeezed onto an awkward, steeply sloped site between undistinguished classroom and dormitory buildings, "crammed like a bone in the throat" of the campus, Cobb recalls. Worse, a ring of service roads choked off surrounding pedestrian space, so that the music college was effectively exiled from the larger university whole.





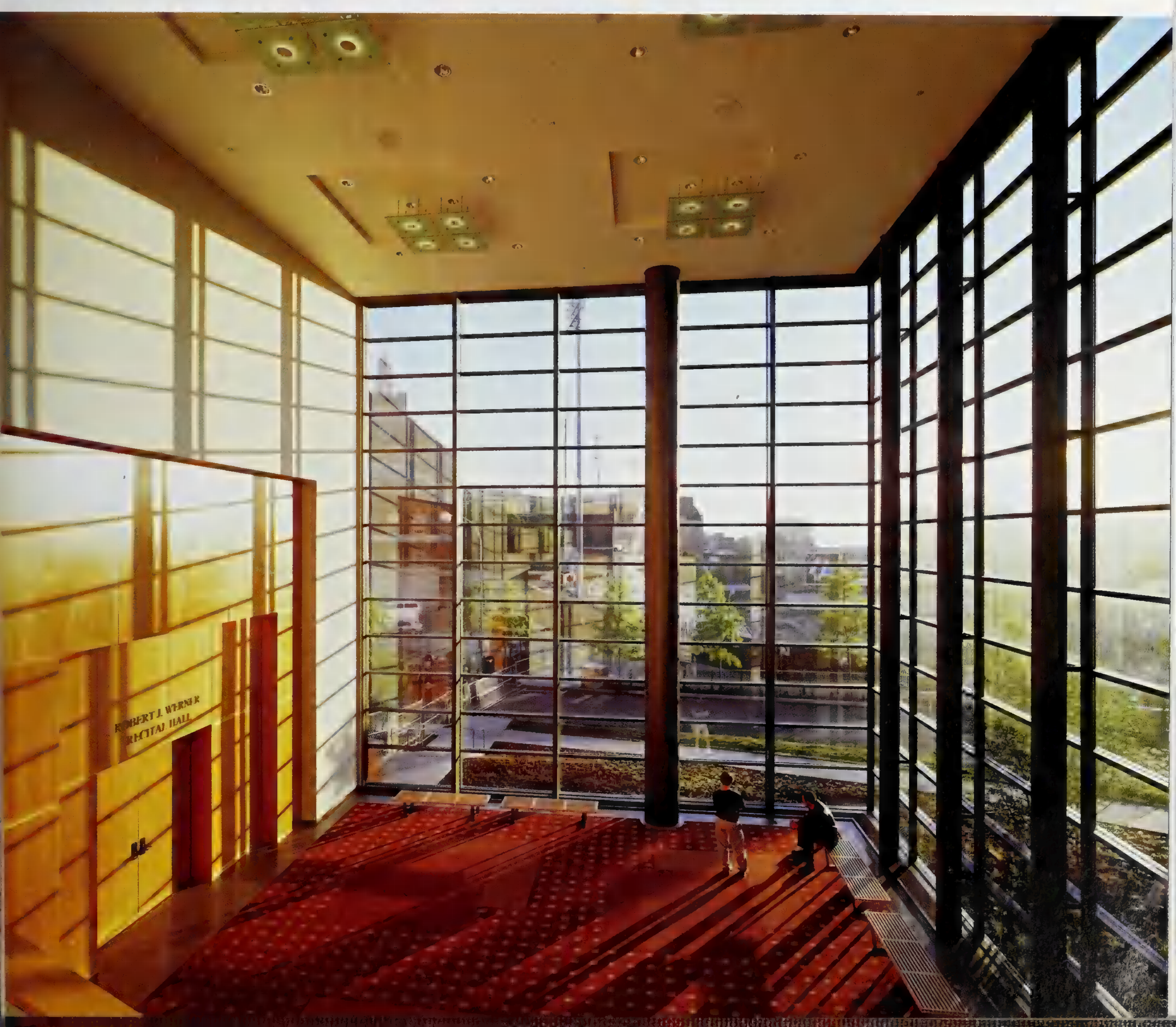
PHOTOGRAPHY: © TIMOTHY HURSLEY

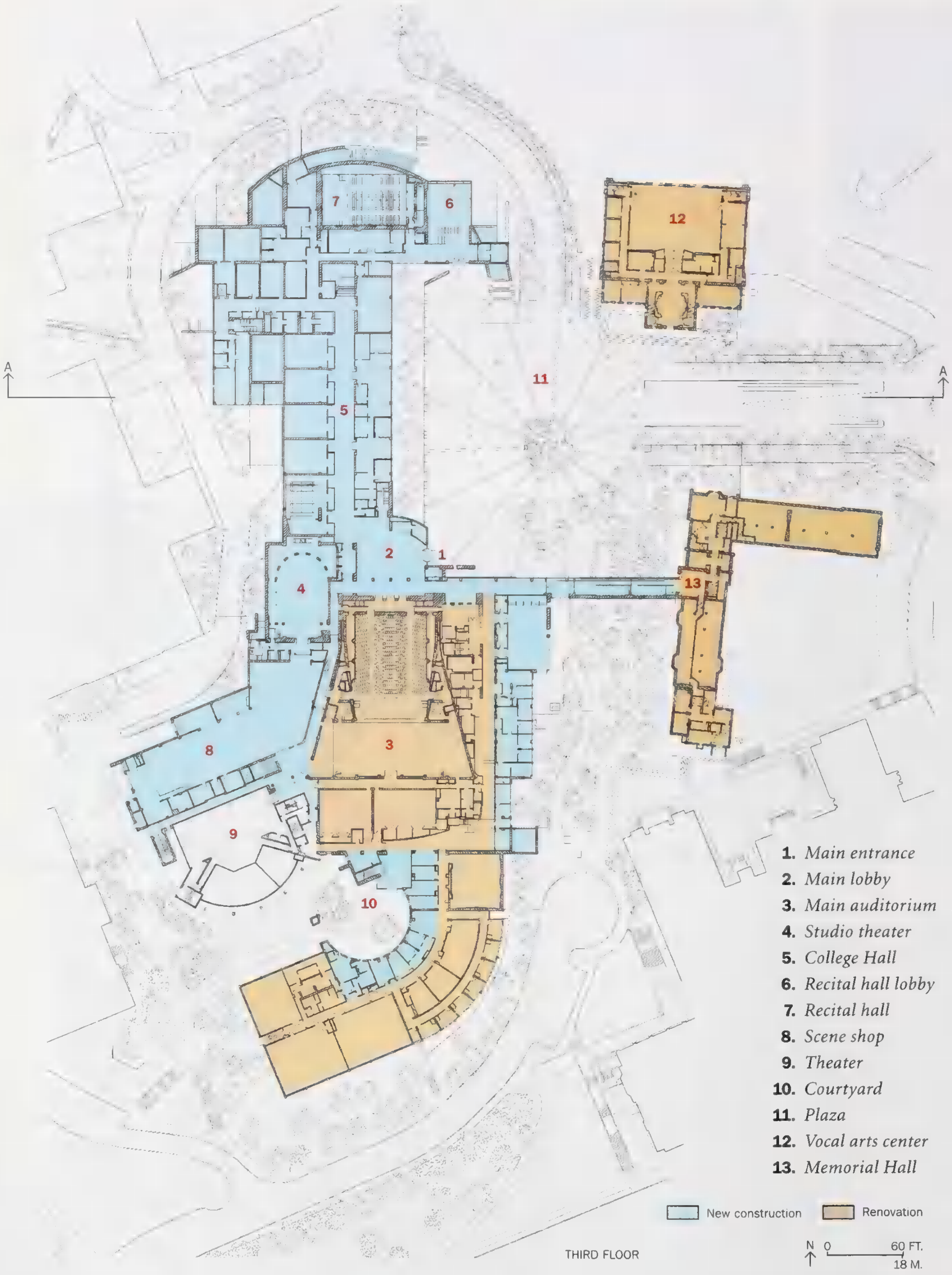
Pei Cobb Freed & Partners was charged with a bold, complicated overhaul: upgrade the aging facilities and more than double the existing floor area. Conservative university budgets and the constricted site ruled out a total teardown of most buildings to achieve a clean slate for new construction, so the architects had to imaginatively salvage at least some of the existing facilities. As an image-elevating goal, administrators also wanted the conservatory to evolve as a village-like plan threaded with gathering places to support the creative community. A final challenge: construction would be phased in six stages over seven years so that classes and performances would not be interrupted.

Solutions/Intentions

After thoroughly analyzing renovation versus new construction options, the architects decided that existing performance and related support spaces could be retained

The plaza is the center around which academic life in new and renovated conservatory buildings revolves, day and night (opposite). The recital hall lobby (below and far left), with a boxlike grid intersected by a curving wall, echoes the chamber's plan. Balconies and wide stairs on the plaza support interaction (left).





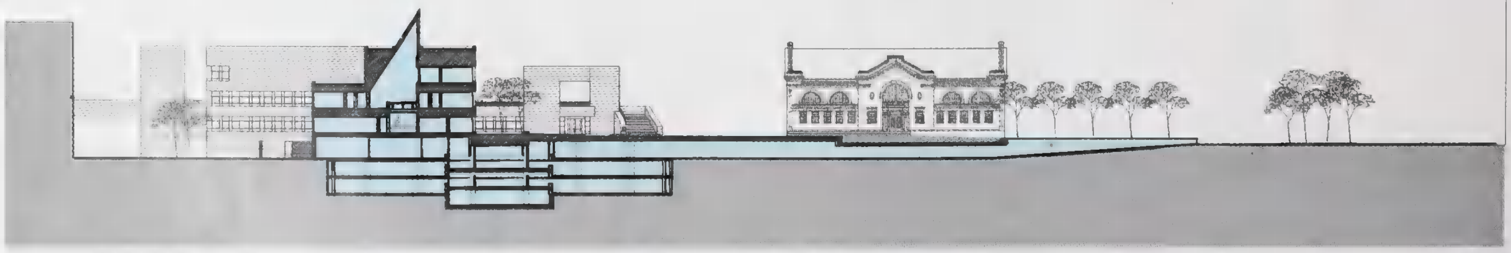
THIRD FLOOR

and renovated, while the classroom wing would be razed and replaced. Two adjacent buildings—an abandoned gym and outmoded dorm—were drafted as sites for a student union and a vocal arts center. These strategic choices made it possible to shape the new academic wing so that it framed a courtyard. Formerly a knot of asphalt streets, the brick-paved piazza now serves as the spatial focus of the buildings, both new and old.

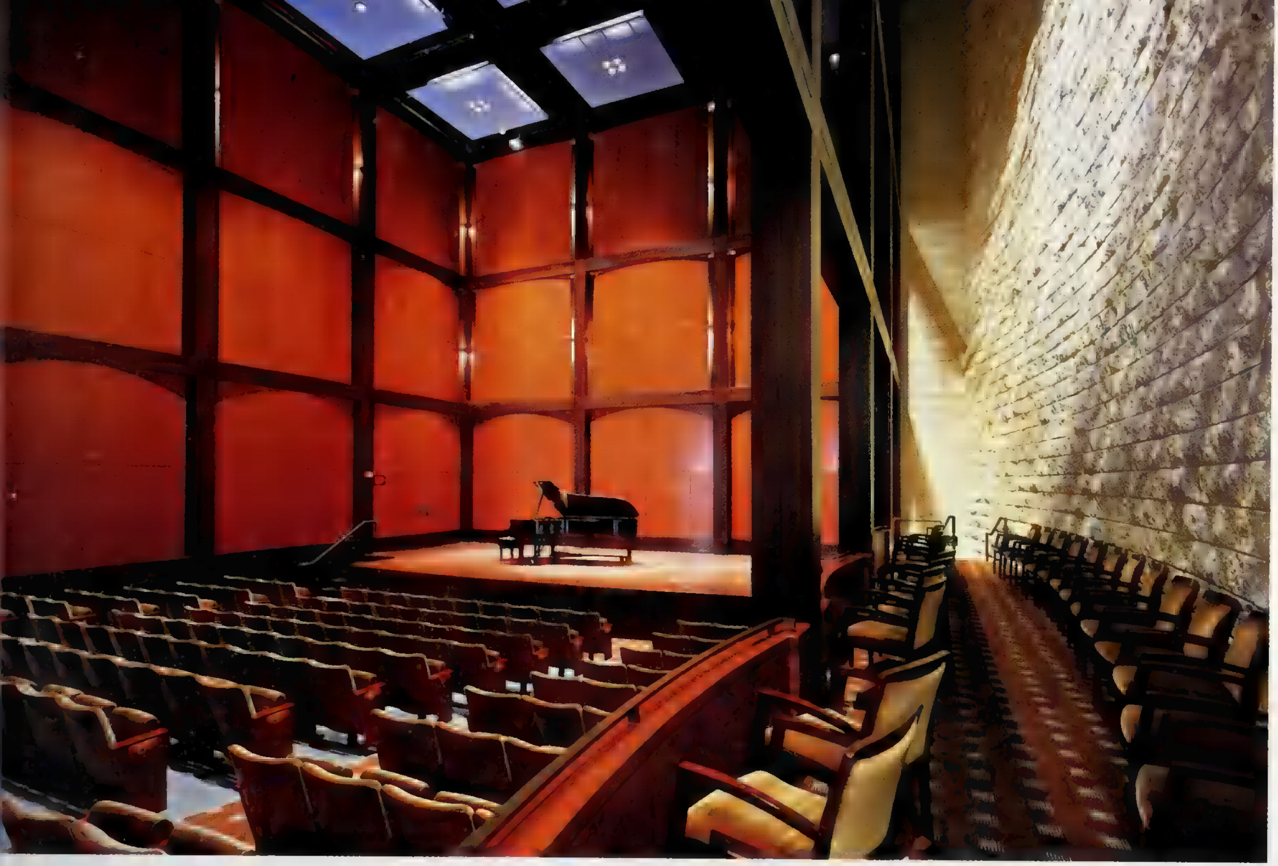
The college's venues now include a renovated 750-seat proscenium theater, an existing 400-seat thrust stage, a new 300-seat recital hall and 200-seat studio theater, and a 100-seat master classroom. New and reconfigured rehearsal spaces in multiple buildings support musical, dance, and theater performances. Rehabbed dorm rooms were particularly well suited for new roles as practice pods.

Commentary

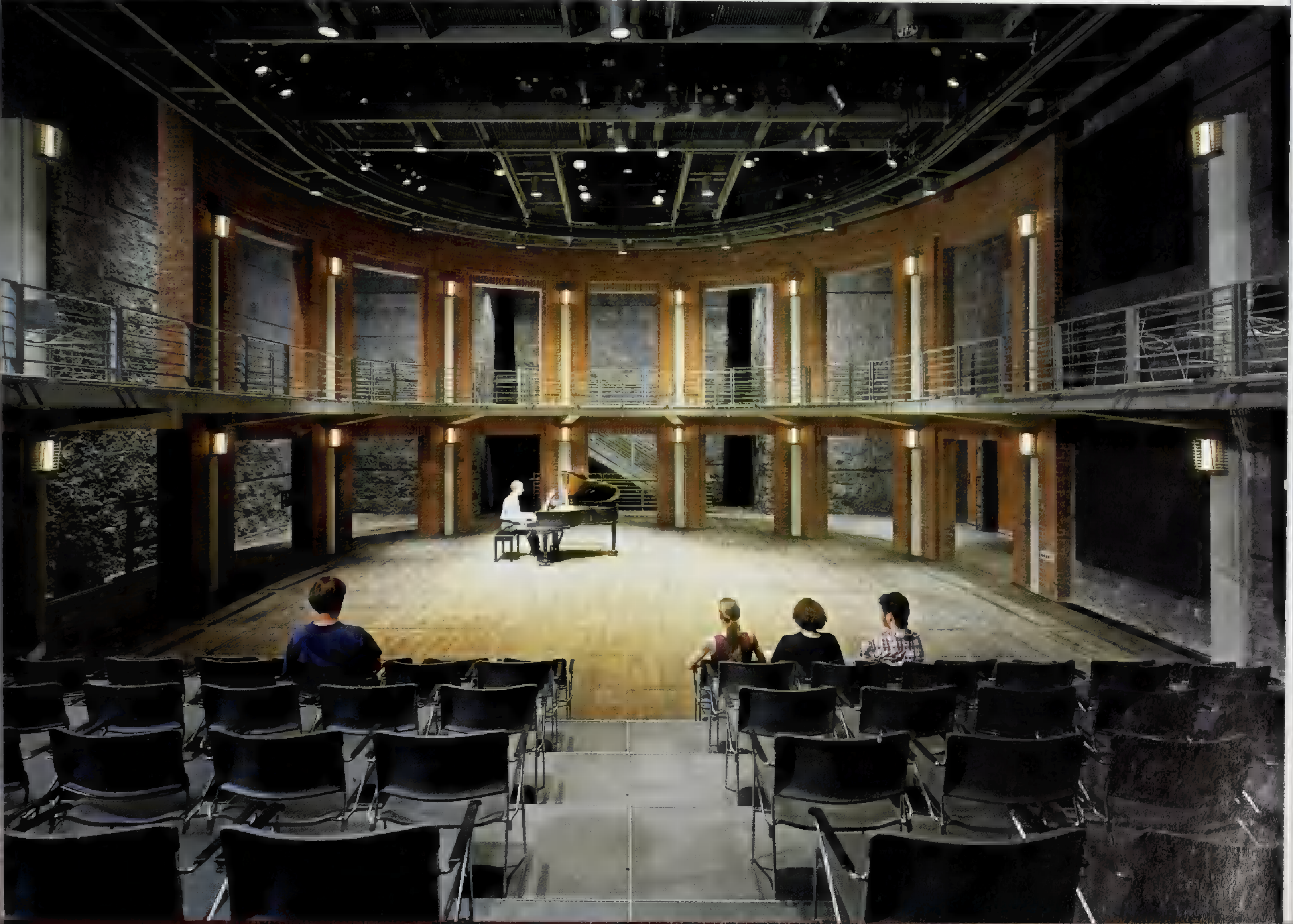
A range of dynamic performance spaces features graceful motifs of grids punctuated by curves, like variations on a musical theme. The proliferation of red brick—including the broad courtyard—seems an unadventurous choice of palette, if still judicious for the budget. But with maturing landscaping, public sculpture, and planned pedestrian bridges that soon will connect the conservatory complex to the center of campus, the nuances of the composition are enriched with each school season. Cobb says his intent was not to create an "easily read" architectural object, but to transform the relationships between a progression of always-in-use spaces. "This is the opposite of a one-liner," he says. "It's the sum of many complex parts." ■



SECTION A-A



The recital hall (left) is expressed as a wood-framed cage of 14-foot squares. A curved wall of limestone sweeps behind a row of seats as a grace note. In the studio theater (below), a brick colonnade acts as a proscenium in front of another rusticated wall, here hewn concrete standing in for natural stone.



Benedict Music Tent
Aspen, Colorado

4

WITH GREAT FANFARE, HARRY TEAGUE BLENDS TRADITION AND IMPROVED ACOUSTICS IN A NEW TENT FOR THE ASPEN MUSIC FESTIVAL.

By David Dillon

Architect: *Harry Teague Architects—Harry Teague, AIA, principal; John Backman, AIA, project architect; Phil Beck, job captain; Milton Rosa-Ortiz, David Keleher, Ryan Sturtz, Michael Hassig, AIA, Brian Wilson, project team*
Client: *Aspen Music Festival and School*
Consultants: *Kirkegaard and Associates (acoustics, audiovisual); Auerbach + Associates (Theater design, media, lighting); ME Engineers (mechanical/electrical engineer); Schmuser Gordon Meyer (civil engineer)*

Size: *37,480 square feet*
Cost: *$11.2 million*
Completion date: *June 2000*

Sources
Membrane structure, cables, fittings: *Birdair*
Curtain wall: *AIA Industries*
Tent doors: *McKinney Doors & Hardware, John Truso Hardware, Industria Acoustics*
Carpet: *Interface*
Raised floor: *Mystic Scenic Studios*

WWW
For additional performing arts projects and more information on the people and products involved in this project, go to Building Types Study at ***www.architecturalrecord.com***

Program

Summer in Aspen means crisp air, sublime vistas, and the sounds of Bach and Beethoven wafting across upland meadows. Ever since Eero Saarinen designed its first music tent in 1949—a canvas "big top" with a dirt floor and log poles—Aspen has been the summer home to hundreds of young musicians and performing artists. The combination of the music festival, the Aspen Design Institute, and the Institute for Theoretical Physics transforms the entire town into a floating seminar in which scholarship intersects with sophisticated play.

Aspen now has a new music tent designed by Harry Teague Architects. It continues the tradition of casual culture initiated by Saarinen's structure and expanded by a larger octagonal version designed by Bauhaus émigré Herbert Bayer in 1967. The new tent, named for Bayer's brother-in-law Frederic Benedict, seats 2,050 beneath a swelling white dome reminiscent of a schooner under sail. Patrons sit on long wooden benches that fan out from a sunken stage, or flop on a sloping lawn dotted with birch trees. The skirt of the tent consists of 180 vertical louvers in Bayer blue that open to the lawn and the mountains in good weather and that can be closed against wind and rain.

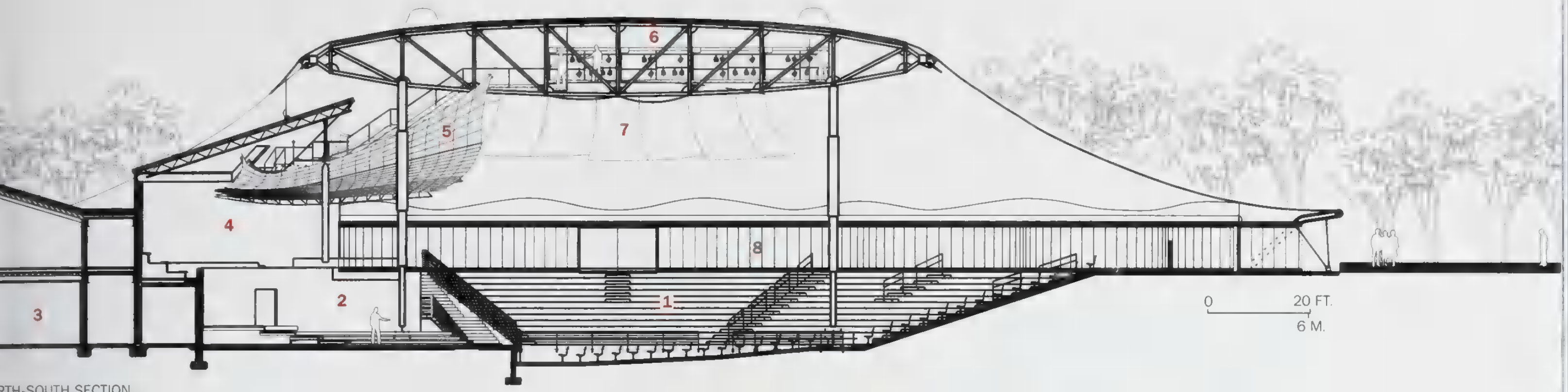
Contributing editor David Dillon writes for the Dallas Morning News.

The design of the Benedict Music Tent was driven partly by nostalgia and mostly by the need to solve the physical and acoustical problems of its immediate predecessor. Aspen residents insisted that the new tent be no taller or wider than Bayer's, that bench and lawn seating be preserved, and that the tent's friendly relationship to nearby Harris Concert Hall—also designed by Teague—be maintained. The architects met these politically sensitive requirements while improving on most features of the earlier designs.

Solutions/Intentions

Both the Bayer and Saarinen tents were made of canvas that lasted only a few years before beginning to leak and tear. At the end of every season, the tents had to be dismantled and stored at considerable expense. The Benedict, on the other hand, is made of the same Teflon-coated fiberglass that covers the main terminal at Denver International Airport. It has the same transparency and warmth as canvas and the strength to withstand snow loads of 95 pounds per square foot. The fabric is secured by steel cables anchored to massive concrete blocks that could be footings for a small bridge.

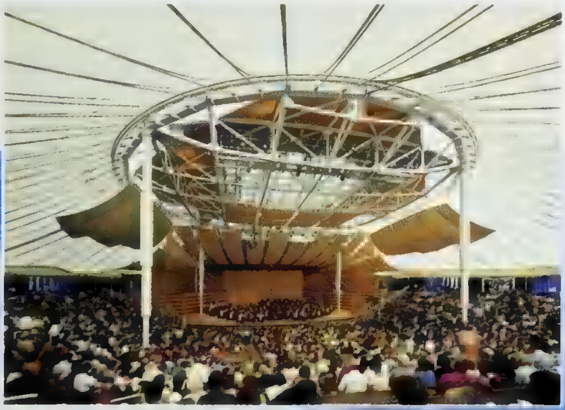
The tougher challenge was to approximate concert hall acoustics within the soft embrace of a tent. Bayer's design had a simple thrust stage and few hard surfaces to



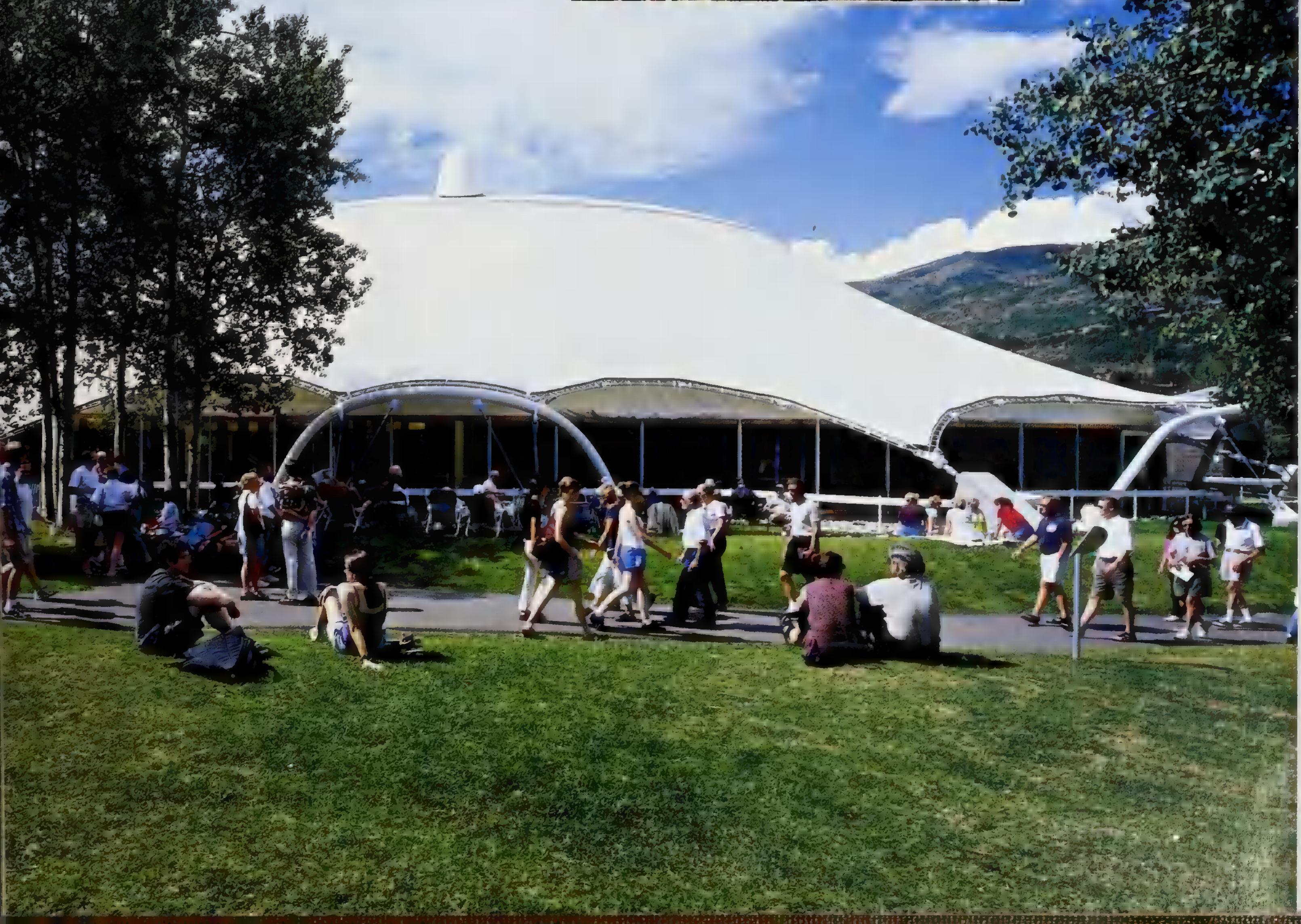
RTH-SOUTH SECTION

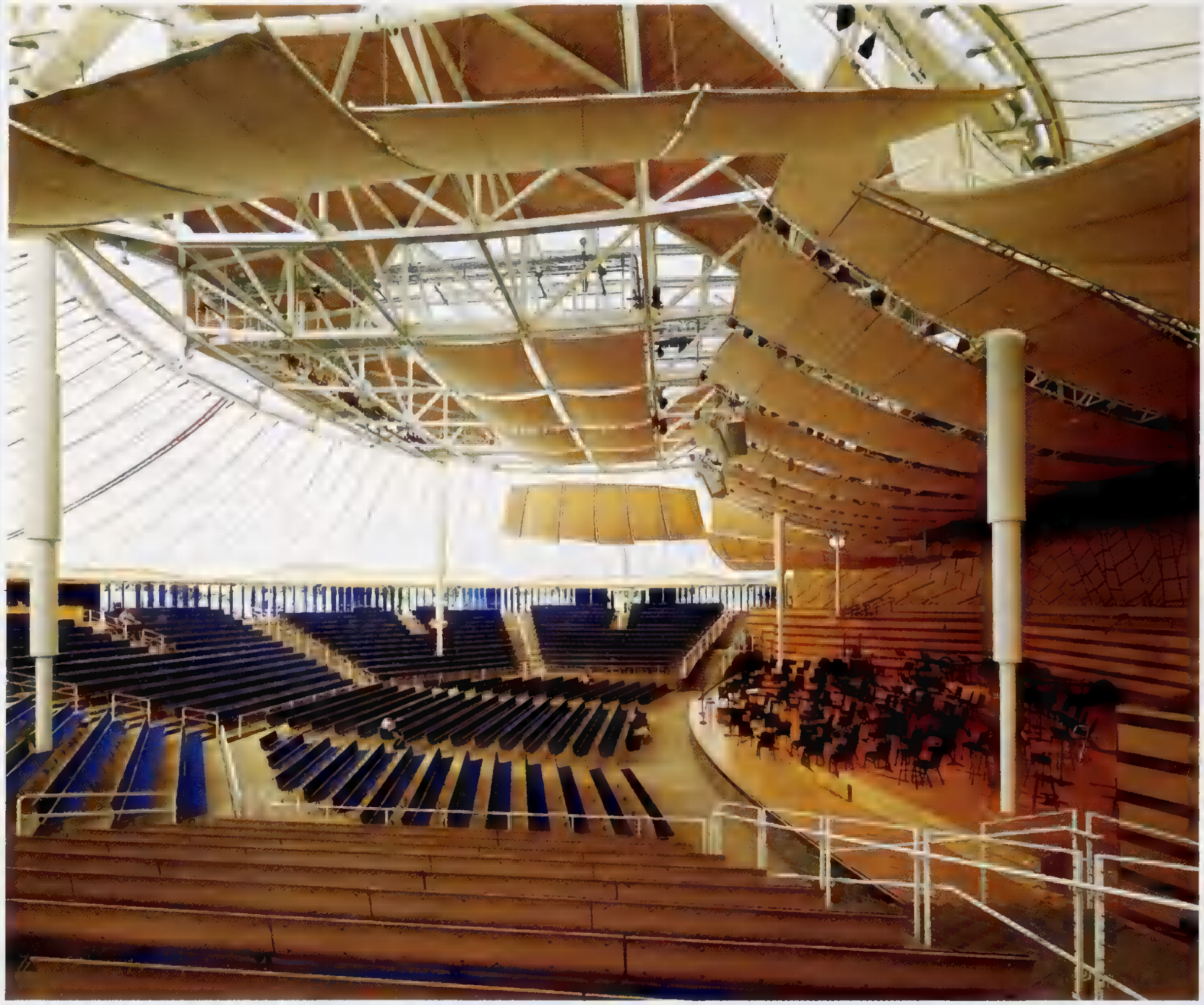
- Seating
- Stage
- Backstage
- Choral balcony

5. *Stage canopy*
6. *Acoustics, catwalk*
7. *Sound reflectors*
8. *Louvered panels*



Concerts have the look of a town meeting, with patrons on benches or sprawled on the lawn.





reflect the sound. Because the musicians couldn't hear themselves or one another, they had to anticipate the conductor's beat to keep pace. "There was no bottom to the music at all," says Harry Teague. "It just disappeared into infinity."

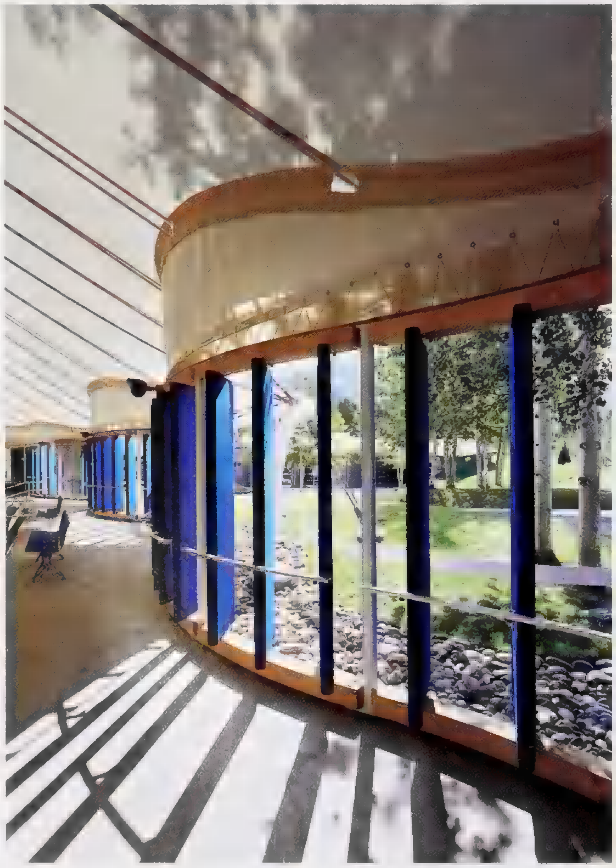
Working with acoustician Lawrence Kirkegaard, Teague designed an acoustical shell to bounce sound back to the stage and out to the lawn. Fabric reflectors swoop above and around the players. The old mushiness has given way to a new brightness and balance; it still doesn't rival the sound in a concert hall, but it's better than anything festival audiences have heard in years. The shell rests on four tapering steel columns designed to sway as much as 12 inches.

Commentary

A tight budget forced a few compromises backstage. While there is space for storage, rehearsal, and services, it is mostly raw and rather grim. The green room, for example, is a painted concrete-block wall. The backstage area, though, is connected by underground tunnel to Harris Hall, which provides more rehearsal and performance space.

These are minor limitations in an otherwise outstanding design. Tradition has been served without retro foolishness. A spirit of relaxed reverence prevails—precisely what the festival founders had in mind. ■

The stage, a wide, paneled semicircle with a choral balcony, holds up to 150 performers (above). Adjustable risers allow for varied configurations, vital to the festival's diverse programming. Vertical louvers open onto the surrounding lawn or may be closed during inclement weather (left and below).



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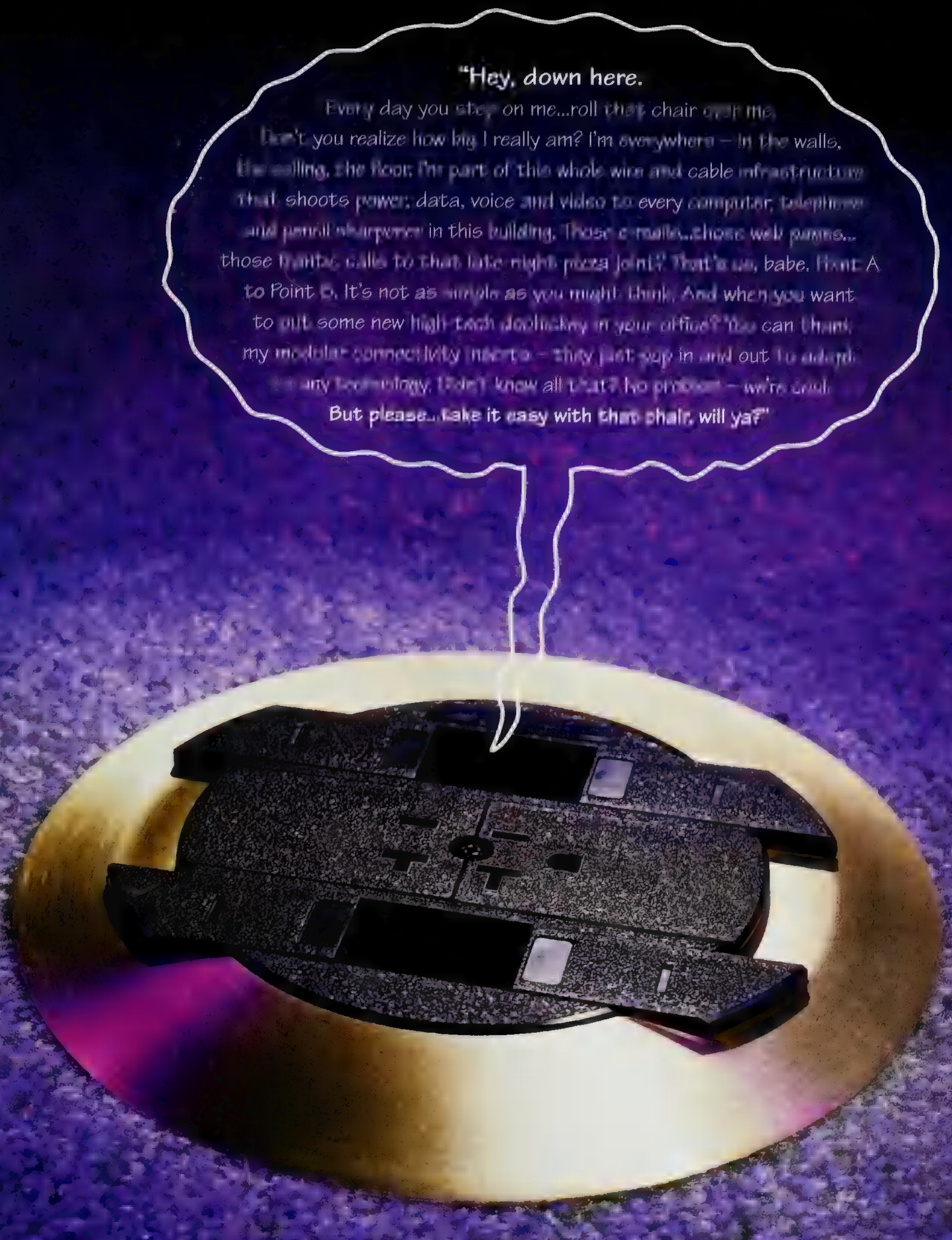
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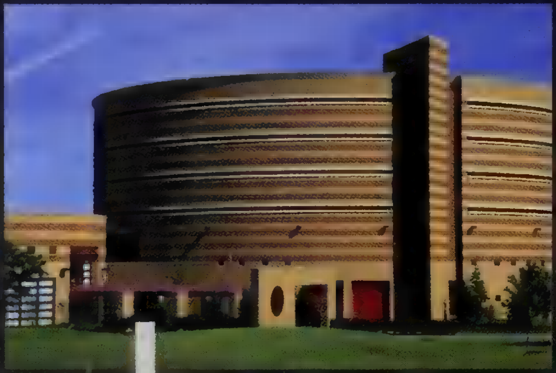

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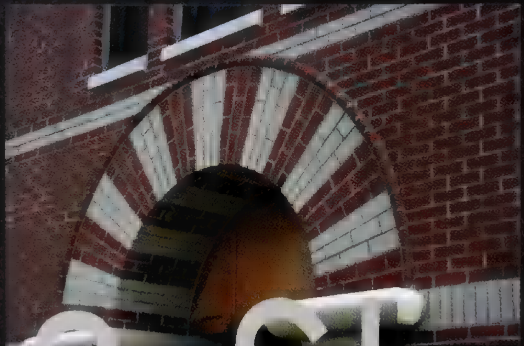

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The Return of Natural Ventilation

AS ARCHITECTS REDISCOVER THE BENEFITS OF FRESH AIR AS AN ALTERNATIVE TO HERMETICALLY SEALED, AIR-CONDITIONED BUILDINGS, THEY DISCOVER NEW ARCHITECTURAL FORMS.

By Todd Willmert

Natural ventilation is not a new idea—for thousands of years wind scoops and towers have been an integral part of vernacular Middle Eastern architecture. These structures moved air either up or downward, depending on the prevailing winds, and helped make homes and buildings habitable in the hot, harsh climate.

During the Victorian era, the English became obsessed with clean air. London and other cities were plagued with smoke- and dust-saturated air, and buildings such as Pentonville Prison and Parliament were designed with chimneys and towers that were used not only to expel smoke and to serve as observation points, but also to be part of the ventilation systems.

After World War II, the advent of central air conditioning and its progeny, the sealed building, made natural ventilation an anachronism. Today it is making a comeback, however, owing to rising energy costs and the worldwide movement toward buildings that employ "green" strategies. Architects and engineers, mostly in England, are using advanced computer and modeling techniques to refine the physics of heating, cooling, and ventilating. Chimneys and towers are key architectural elements for harnessing pressure differentials by employing the stack effect and other air-movement principles.

Tower-top cowlings, which can be seen above the buildings, help draw fresh air through the offices at the Jubilee Campus at Nottingham University in the U.K.

Todd Willmert is an architect with Ellerbe Becket and a researcher at the University of Minnesota's Center for Sustainable Building Research at the College of Architecture and Landscape Architecture.

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/AIA Continuing Education article. To receive credit, turn to page 204 and follow the instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. Explain basic air-movement principles.

2. Describe pre–Industrial Revolution ventilation devices.

3. Explain how night flushing cools buildings.

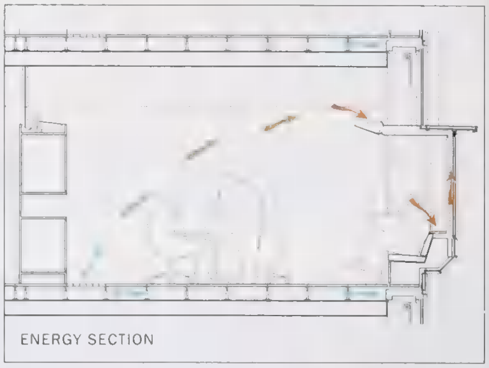
4. Understand the economic and environmental benefits of natural ventilation.

WWW For this story and more continuing education, as well as links to sources, white papers, and products, go to ***www.architecturalrecord.com***

The following case studies provide lessons for American architects, because the design strategies, which were motivated by client mandates to reduce energy costs, go beyond the implementation of their efficient environmental control systems. Such projects work because naturally ventilated buildings have a certain appeal that sealed buildings do not. In the U.K., there is a long tradition of designing well-ventilated buildings to promote health and hygiene; typically in such structures large quantities of diffuse air are delivered at low velocity at floor level. This contrasts dramatically with the common U.S. practice of delivering forced air at high velocity near the ceiling, a more energy-intensive strategy. Furthermore, the temperate U.K. climate—not too hot, cold, or humid—makes natural ventilation a relevant concept. Ventilation also helps to remove moisture; by code, buildings are ventilated at a background rate (24 hours a day) to alleviate dampness.

Buildings that breathe

These circumstances have fostered a new approach to mechanical servicing in the design of large offices and other building types. In particular, two projects in England—the Inland Revenue Center in Nottingham, by London-based Michael Hopkins and Partners with engineers Arup, and the Queen's Building at De Montfort University in Leicester, by Short Ford Associates with Max Fordham engineers—are excellent examples of a new trend in which architectural form purposefully exposes mechanical function.



Portcullis House (left), across from Big Ben, houses offices for members of Parliament. The wall cavities and ducts, articulated on the facade, actually diagram the path from the main block to the rooftop. Fresh air is delivered to the offices (above) via a plenum under the floor. Solar radiation is absorbed by dark blinds located in the ventilated cavity of the triple-glazed bay windows.

Vertical chimneys and towers are the noteworthy elements of these buildings, but they are only the culmination of a complete planning effort that includes three-dimensional section development. In fact, a low-energy, passively ventilated building must fully address total airflow patterns, from intake to exhaust, with the chimney or stack effect the primary, but not sole, principle employed. The other key consideration for enhanced ventilation is displacement ventilation (harnessing air's natural buoyancy to facilitate its movement). The principle is simple. Fresh air is introduced at the bottom of a space. As it is warmed, primarily by people and equipment, it rises and collects against the ceiling, where it can flow to the exhaust chimneys or towers. Key factors in calculating stack ventilation include both total and net stack height—the distance from the top-floor ceiling to the top of the stack.

IN FACT, A LOW-ENERGY, PASSIVELY VENTILATED BUILDING MUST FULLY ADDRESS TOTAL AIRFLOW PATTERNS.

At the Inland Revenue Center, a 400,000-square-foot government office complex, wings are 45 feet wide and 240 feet long, to maximize exterior exposure. The long, narrow floor plates of the building facilitate cross ventilation when windows are open. When the windows are closed, intake louvers draw in fresh air and allow stale air to travel through the building to the roof ridge and towers at the end of each wing. On the top floor, spent air is expelled by a skylight ridge, instead of the stair towers, which would have to have been at least 20 feet higher than the ceiling to draw air adequately. Each of Inland's three floors has parallel airflow. Fans within the raised floor on each level pull fresh air through louvers directly into the cavity. The air travels over heat exchangers, where it is heated if necessary, then moves through a nearby floor grille, where it is introduced in the offices at floor level. Stale, warmer air collects at the ceiling and is drawn along the ceiling until exhausted through the ridge, or stair towers, whose roof raises and lowers to regulate rate.

At the Queen's Building, window, louver, and chimney forms demarcate the various ventilation strategies—which are principles taught in the classrooms of the building itself. Multiple atrium chimneys exhaust air, supplementing other chimneys in the high-bay lab spaces and auditoriums. The great variety of spaces and their usage at Queen's calls for a more varied ventilation approach. Here, 100,000 square feet of labs, classrooms, auditoriums, and offices housing the university's engineering program are either high, narrow spaces exposed on two or more sides, or they open to an atrium. Two small labs for precision work require mechanical ventilation, but aside from these spaces, more passive means are fully explored. Offices utilize simple cross ventilation where possible, with deeper spaces relying on stack ventilation. Underfloor ventilation provides fresh air to auditoriums; as the warm air rises it is pulled out the stacks. Rooms overlooking the atrium have walls punctured with operable panels that can be changed to control ventilation.

These projects illustrate the nuances of chimney caps and tower tops, which are critical to ventilation design. The towers at the Inland Revenue Center absorb solar energy to create and assist draw. By contrast, another project by Michael Hopkins and Partners, this one at Nottingham University, uses tower-top cowlings that rotate in the wind. With openings facing downwind, the wind pressure differentials over the building and across the cowlings create draw. At Queen's, the chimneys, with four faces, are designed to draw regardless of wind direction and are solar-assisted. Much recent work utilizes this principle, instead of the temperature differences that drive the stack effect to foster air movement. Potential advantages of this strategy include chimney diameters that are smaller than those usually required to create the stack effect.

PHOTOGRAPHY: © RICHARD DAVIES

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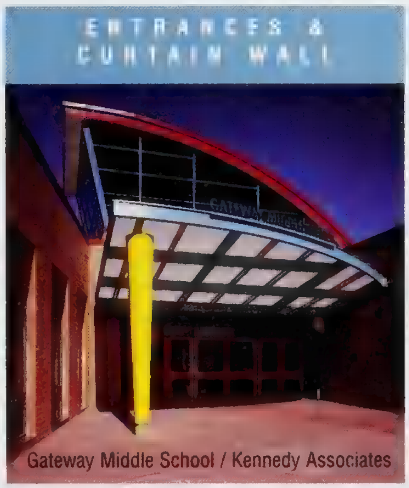
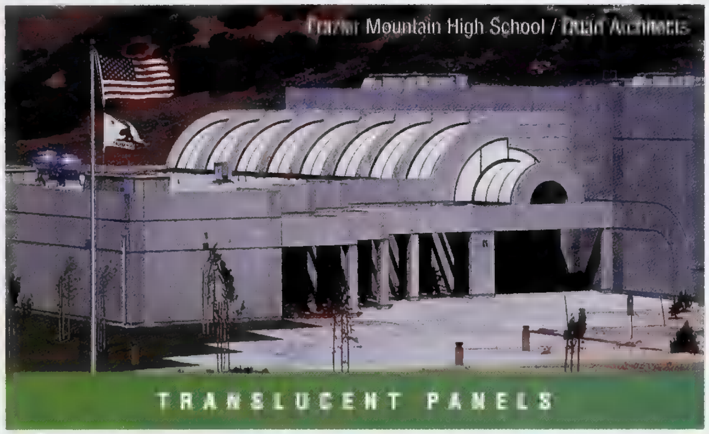
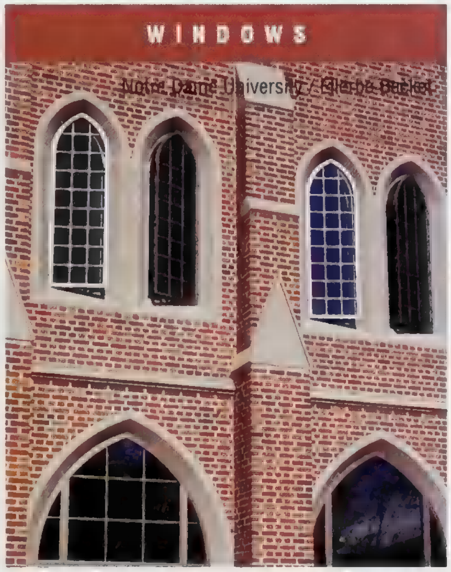


Gateway Middle School / Kennedy Associates



Frazier Mountain High School / [illegible] Architects

Love Library / Mosher, Drew, Watson, Ferguson



Notre Dame University / Ellerbe Becket

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At the Inland Revenue Offices in Nottingham, U.K., fresh air, assisted by fans, enters through full-height, operable windows (above) and is exhausted through the top of the stair towers (top).

PHOTOGRAPHY: © GRAHAM GAUNT/ARUP

Economical and environmental benefits

As demonstrated in the Inland Revenue Center and Queen's Building, natural ventilation enjoys considerable advantages: air-conditioning equipment can be downsized initially. This reduces electrical consumption, peak demand, and carbon dioxide emissions at the electrical generating plant. The results, confirmed over the last few years, are more sustainable buildings with operating budgets lower than the norm. Inland Revenue consumes about a quarter of the energy a conventional building would utilize on the same site, with a conventional air-conditioning system accounting for about half that energy. Monitoring at Queen's reveals similarly impressive results.

Part of the economic and environmental success of these buildings stems from the fact that natural ventilation strategies tend to work well with other sustainable practices. For instance, the high spaces and narrow floor plates necessary for ventilation also work well with daylighting. Naturally ventilated buildings such as these also depend on thermal mass—concrete and masonry—to provide a stable mean radiant temperature. Not only does mass temper incoming air, but ventilating it after hours, or "night flushing," dissipates the heat built up during the day. Mass provides a thermal damper, so the building requires less overall energy to heat and cool.

Perhaps the real strength of natural ventilation is that architects have found it can be a new source of inspiration. The spring point for Alan Short's recent renovation of Manchester's Contact Theater was scrapping the air conditioning, which was always too noisy during performances, and replacing it with ventilating chimneys. Ventilation there consists primarily of five extract stacks built on the roof. Square terra-cotta inlet flues at ground level, revealed rather than concealed, are made from standard chimney liners, a building component rarely visible at all, but celebrated in this design as a direct expression of an inventive servicing approach.

Computer and physical modeling

Empirical insights are the starting points for design, but technology is pushing further. Arup and Max Fordham have both developed proprietary computer programs to help determine tower and chimney parameters. Multiple factors impact airflow: The amount of heat absorbed by the tower or chimney dictates airflow rates; the size of intake grilles into each space limits the amount of air that can pass through them; room geometry and openings to the stack itself affect air currents. A computer model of the proposed design, with weather data integrated into the program, can simulate the myriad factors determining airflow.

Physical models are also used to cross-check the computer simulations, which are not perfect and are not powerful enough to model the airflow through the complicated shapes of some rooms. Wind-tunnel testing of scale models has proved to be an effective design tool to analyze air movement through a building. Another method employs saline solutions. These sink in water in exactly the same way that hot air rises in colder air. In this method, a clear plastic model of a building is immersed in a water bath. When the saline solution is added, its flow reveals how increasing stack size or the number of air inlets can boost airflow. If a room's shape or partitions hinder airflow, this will be indicated by the physical model.

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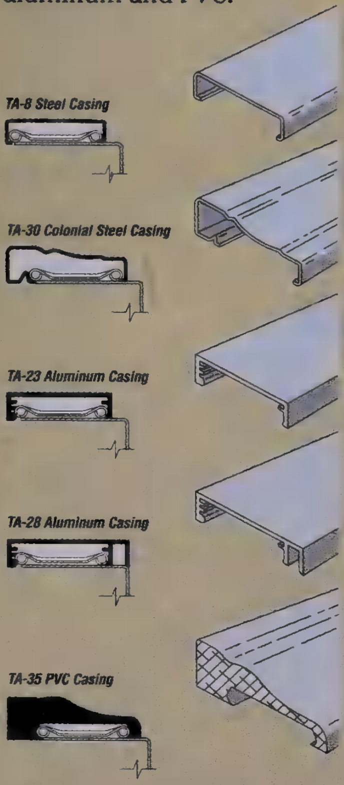

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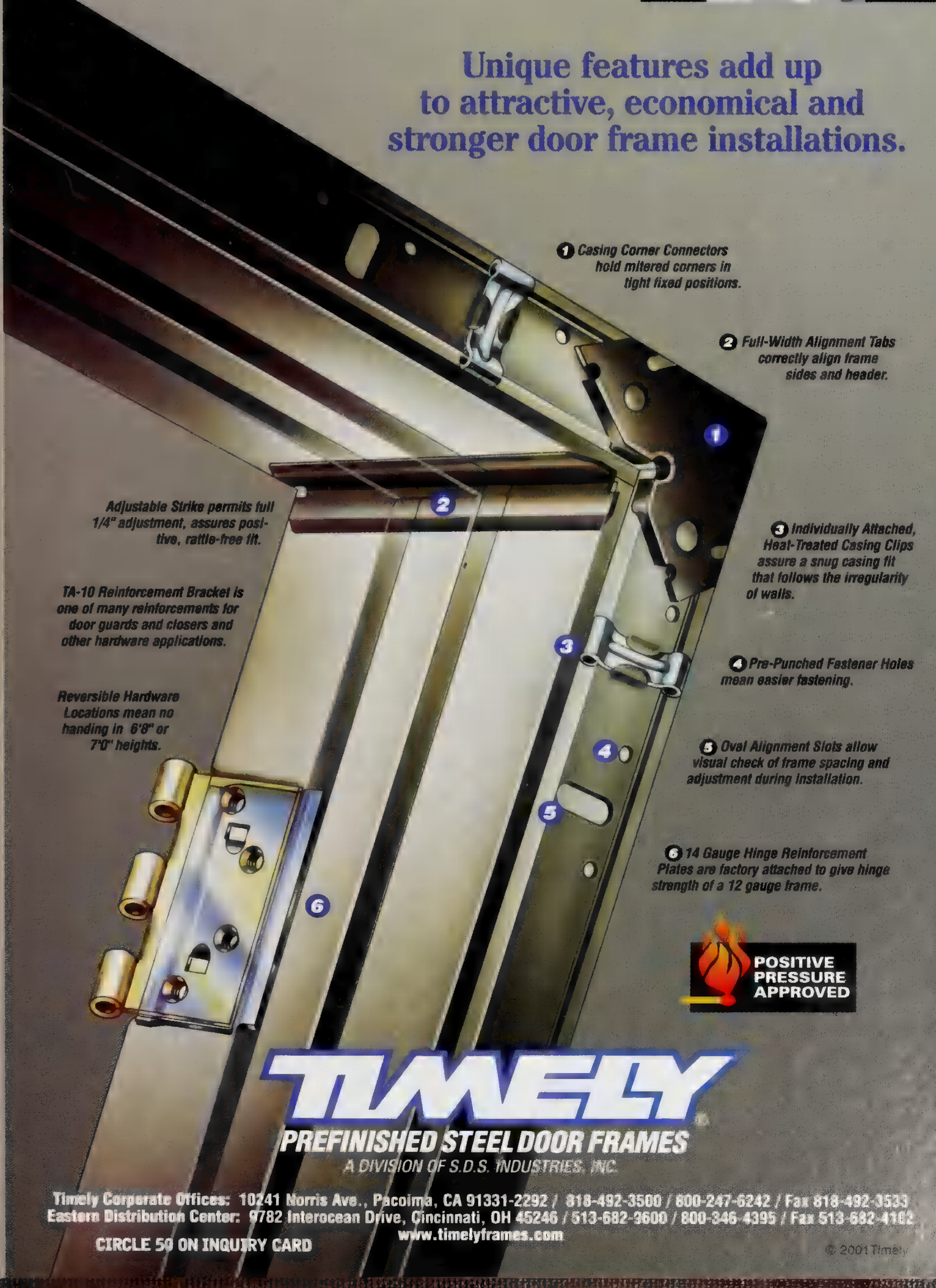

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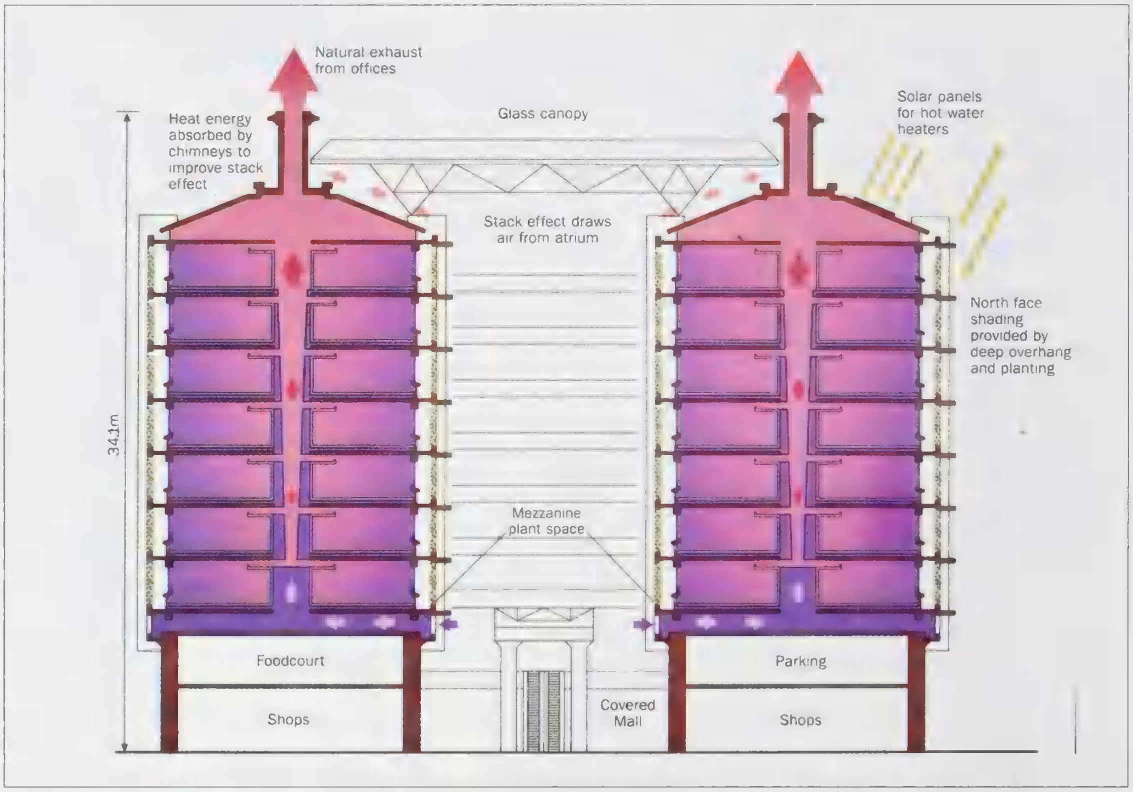
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Eastgate (below, right and left), a large office block in Harare, Zimbabwe, relies on long, narrow floor plates for maximum daylighting and ventilation. A large atrium, covered by a glass canopy (below, left), provides fresh air to the ventilation system, as shown in the energy section (left).

The development of expertise and design tools contributes to an expanding range of naturally ventilated projects. In Short's recent completed Coventry University Library, the ventilating chimney vocabulary is applied to a new building type; at Hopkins' Saga Headquarters it is applied to a corporate facility. Other practitioners are also exploring the ventilation concepts: In a dorm project in Durham by Arup architects and engineers, the buildings cluster around an iconic ventilation tower. A row of stainless-steel chimneys in Feilden Clegg's Building Research Establishment in Hertfordshire punctuates and reinforces the building's bay structure. Battle McCarthy Consulting Engineers has worked with architects to explore ventilating towers and chimneys for shopping malls and other projects.

These projects encompass a range of climates where passive, low-energy ventilation is most applicable, but it is important to note that sites such as these should have access to fresh air. Even this limitation is being challenged, however, at Hopkins' Portcullis House, which contains offices for members of Parliament and is located right across from Big Ben. London's air and security concerns dictated inoperable windows,

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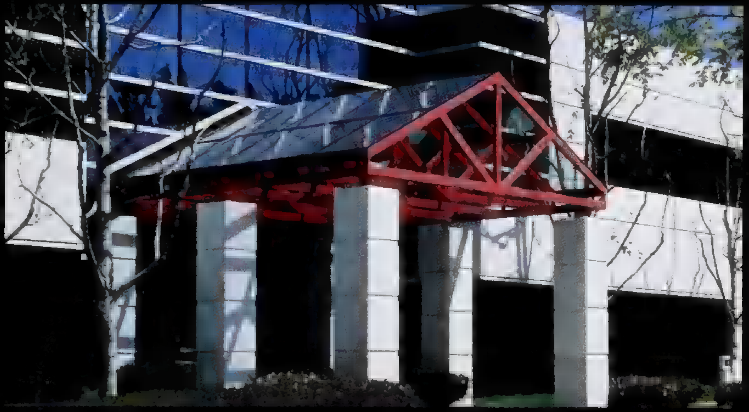

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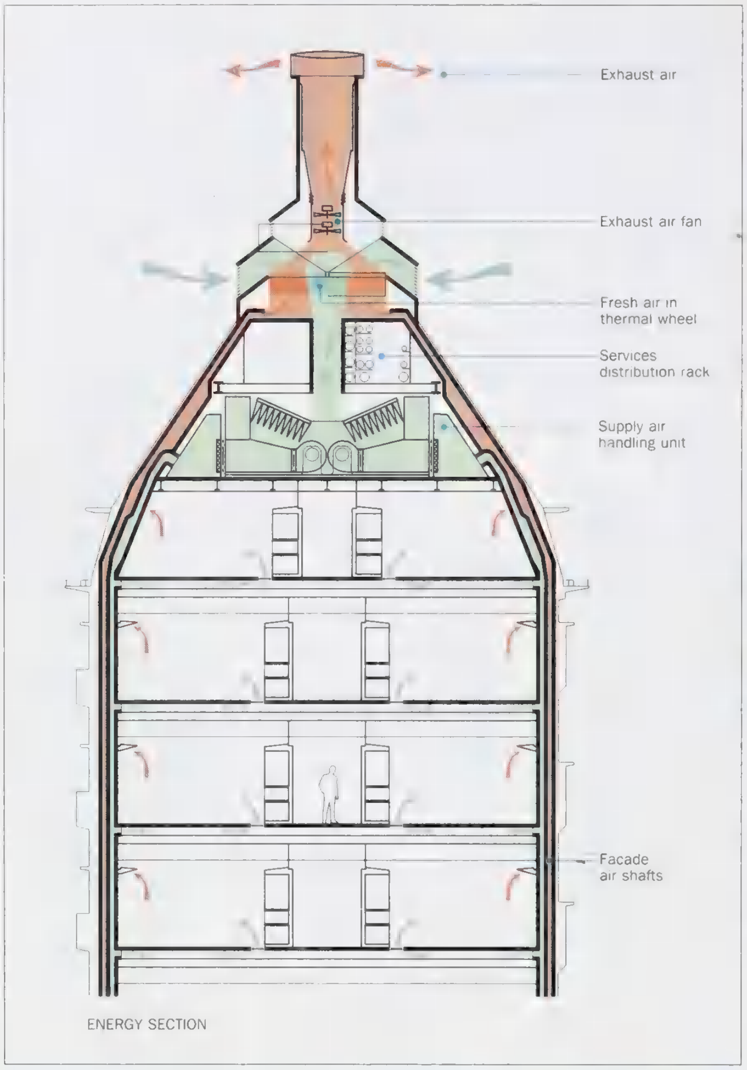

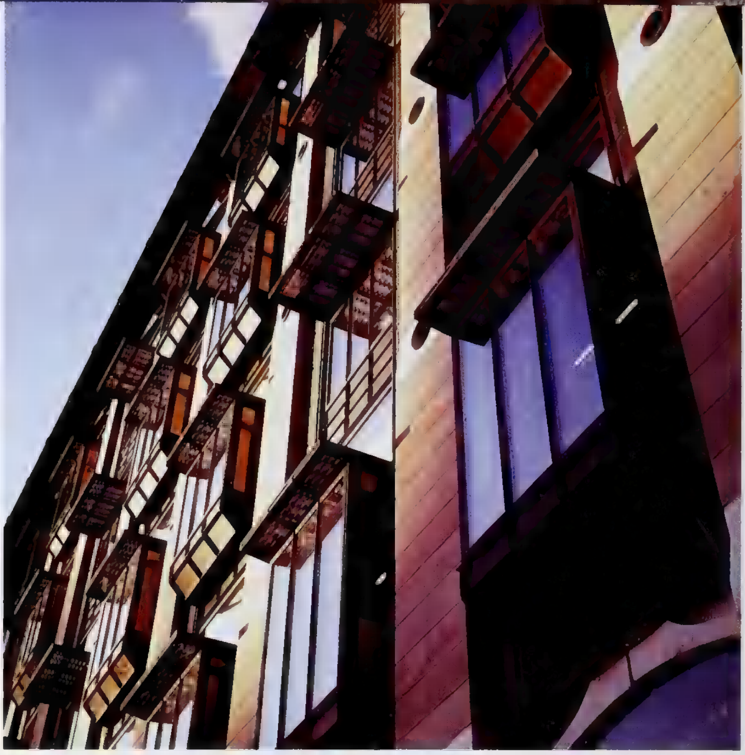

At Portcullis House (above and below) in London, the windows are not operable, so air is drawn in at the chimney bases and rises through facade air shafts as shown in the energy section (left).

suggesting a conventionally air-conditioned building. Instead, 14 bronze chimneys and connecting ductwork send spent, stale air out the chimney caps. Fresh air is brought in at their bases, where it is cooled—with cold ground water drawn from 450 feet below the building—before it is delivered to office spaces.

Natural ventilation goes global

While circumstances favor development of naturally ventilated buildings in the U.K., the principles are applicable to other cultures and climates. Eastgate by Pearce Architects with Arup in Harare, Zimbabwe, illustrates stack-ventilation concepts in an office block. The capital and maintenance costs of imported air conditioning, along with other factors, led designers to develop a passive ventilation alternative—the first of its kind in Africa. Harare's climate is moderate, characterized by sunny, warm days and cool nights, yet it is quite distinct from the climate in the U.K. A myriad of strategies—shading, good daylighting, and ventilation chimneys—contribute to a low-energy building made of local materials.

DEPENDING ON BUILDING PROGRAM AND TYPE, NATURAL VENTILATION IS APPLICABLE THROUGHOUT THE U.S.

Depending on building program and type, natural ventilation is applicable throughout the U.S.—at least for parts of the year. Yet in much of the country, natural ventilation cannot totally supplant air conditioning for spaces requiring full conditioning, given humidity levels in the peak cooling season. The concept is most appropriate for mountain climates, with low humidity and large diurnal temperature swings. For a proposed classroom and laboratory facility at Montana State University in Bozeman, BNMI Architects plans to use stack ventilation, expressed in the towers, for ventilation and passive cooling. The area's cool summer nights, which are often 30 degrees Fahrenheit lower than the daytime highs, mean that night flushing can cool the building sufficiently. According to calculations, no air conditioning will be required.

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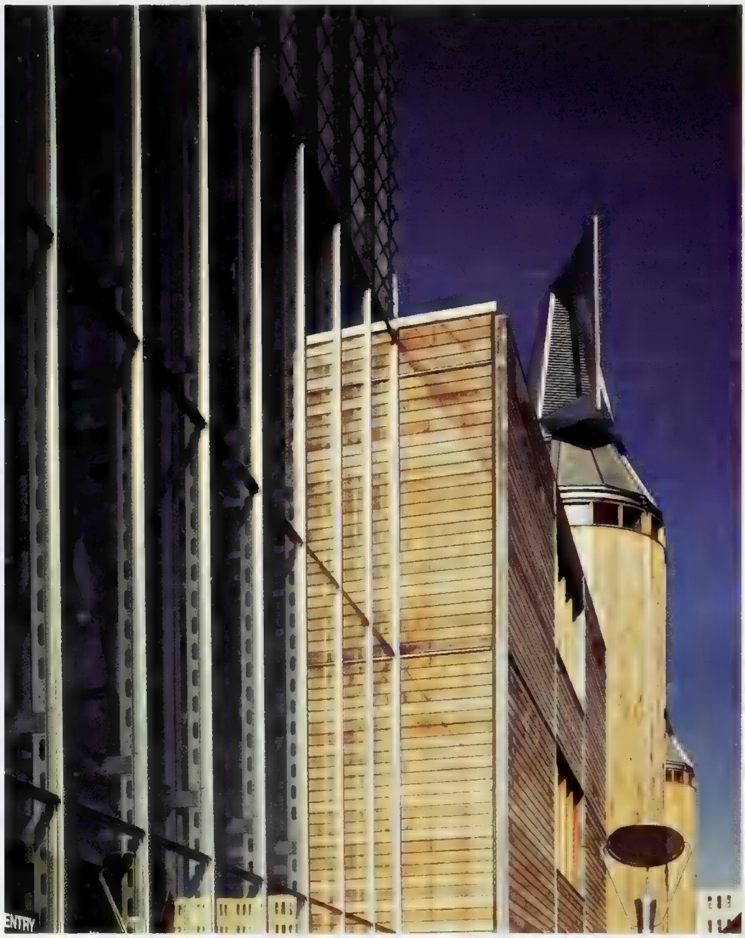
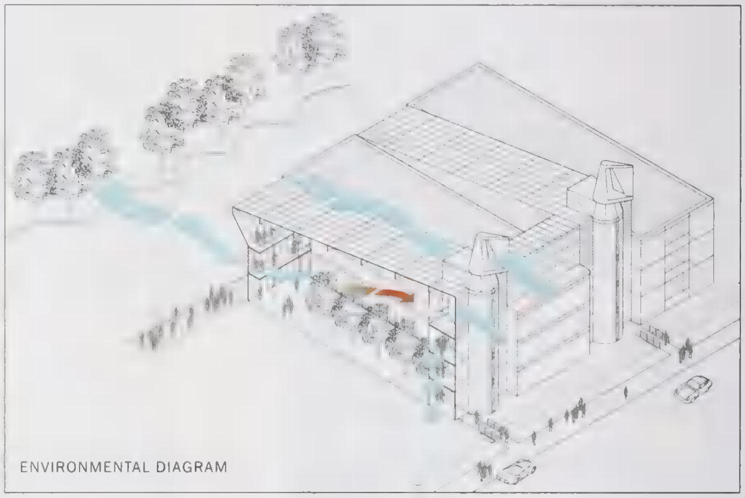


Nottingham University's tower-top cowlings (left) rotate in the wind. Pressure differentials across the building and cowlings create draw (below).

In the hands of talented architects and engineers, vertical gestures are becoming distinctive elements wedding architectural design and building service systems. Bridging these concerns in this way is not new: Wright's Larkin Building and Kahn's Richard Medical Labs both have a striking vertical expression of mechanical services. What is novel, however, is how chimneys and towers become key components as alternatives to hermetically sealed buildings. While the flat-roofed, horizontal aesthetic—whose ascendancy as a predominant design style coincided with the popularization of central air conditioning—is coming under challenge, the new vocabulary can only expand as strategies underlying these building are explored further. ■



ENVIRONMENTAL DIAGRAM

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- ◆ Read the article "The Return of Natural Ventilation" using the learning objectives provided.
- ◆ Complete the questions below, then check your answers [page 204].
- ◆ Fill out and submit the AIA/CES education reporting form [page 204] or file the form on ARCHITECTURAL RECORD's Web site at www.architecturalrecord.com to receive one AIA learning unit.

QUESTIONS

1. How does the stack effect work?

2. How do natural ventilation and reduced energy consumption work together?

3. How does night flushing work?

4. What factors impact airflow?

5. Why isn't natural ventilation widely used in the U.S.?

6. What is parallel airflow?

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Digital Architect

Tips from the IT masters

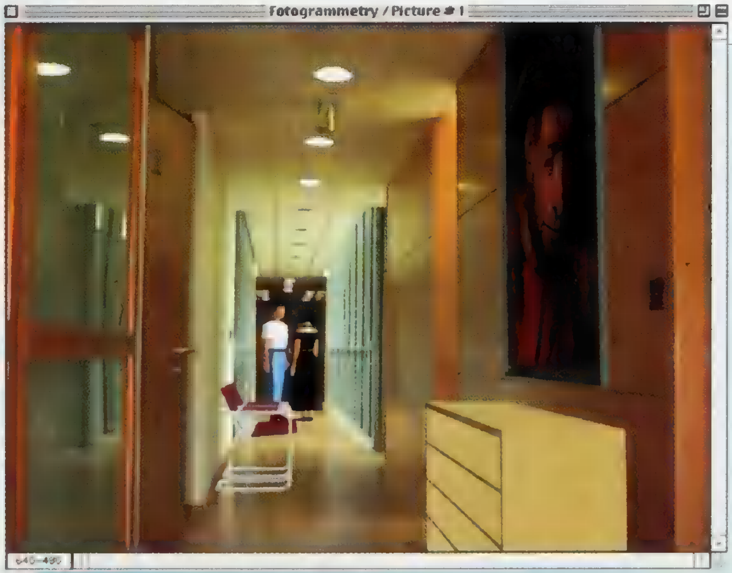
By Jerry Laiserin, FAIA

Architects have been using computers long enough to have determined some guiding principles for what works and what doesn't. Part of the mission of AIA's Technology in Architectural Practice Professional Interest Area (TAP/PIA) is to identify and disseminate these best practices or lessons learned. During the past year, TAP/PIA has convened several panels of architects who manage information technology (IT) for their firms, and the panels explored the issues in depth. As a past chair of TAP, I helped organize and moderate panels in Boston and Portland, Ore., in which participants examined the adoption of technology in architecture firms, the effect of technology on practice and firm structure, and possible future directions. Taken in the aggregate, the panelists' comments and conclusions amount to a catalog of tips from experts who have mastered these issues.

Be flexible but expect to invest

In the mid-1980s, firms that could afford to purchase the extremely costly computers of that time often became mired in legacy issues: Their investment in equipment and software created a reluctance to adopt newer, less costly, and more widely used hardware and software tools that came along in the next 5 to 10 years. Over time, firms realized that this hesitance was hindering their growth and that success with technology demands flexibility in the face of constant technological evolution. For example, ADD, Inc., a 150-person firm with offices in Cambridge, San Francisco, and Miami, has undergone at least five technology transitions in 15 years. Jill Rothenberg, information systems (IS) director and senior associate principal, says, "We started with ARRIS CAD on Intergraph (UNIX) workstations, then moved to the Macintosh, first with Claris CAD in 1992, followed by Microstation on the Mac in 1997. When Bentley Systems stopped providing support for the Mac platform, we kept Microstation but switched to Windows PCs." Now ADD is exploring Revit as a CAD alternative to Microstation.

The pros are also aware that technology is no longer an optional aspect of practice; firms that wish to remain up-to-date must maintain a consistent level of investment and research. "You have to see technology as a consumable item," says Marc Margulies, AIA, principal of his own 40-person firm in Boston, which went through three technology transitions in 12 years before standardizing on Autodesk Architectural Desktop. Although keeping up with technology has increased the total cost of doing business, computers and software are much less expensive on a per-user basis than they were 15 years ago. And technology providers—knowing their customers face these challenges—have improved the cost-effectiveness of how their products work with one another, and with older hardware and software platforms.



Software tools integrating 2D and 3D, Windows and Mac, visualization and photographs can simplify digital practice by giving firms fewer individual tools to manage and integrate.

Keep it simple

Many architects initially used UNIX workstations or Macintosh computers, yet today more than 80 percent have standardized on Windows-based PCs, with the rest still using Macs (very few U.S. architects still use UNIX workstations). Similarly, local area networks (LANs), which once ran primarily on Novell or UNIX operating systems, now run almost exclusively on Microsoft WindowsNT or Windows2000 server software. According to Eric McKinney, AIA, chief information officer of 80-person Gordon H. Chong & Partners (GHCP) in San Francisco, "Five or six years ago we stopped using Macs and Novell server software in favor of a 'Microsoft everywhere' approach, because a single environment of commonplace systems lets us spend less time managing technology and more time making architecture." At Callison Architecture, a 450-person firm in Seattle, IT manager Susan Connor Koenigs warns, "Don't be seduced by bells and whistles; pick the software that works best for you. Most of the products we use have capabilities we're not even touching."

Technology is more than CAD

There's no question that CAD programs are a primary focus among architects: All firms produce project documents in CAD, with roughly 60 percent of architects using

Contributing editor Jerry Laiserin, FAIA, provides strategic consulting services to architects and their technology providers.

WWW For more information on technology for architects, including reviews, vendor lists, and links, go to Digital Architect at **www.architecturalrecord.com**

AutoCAD, nearly 20 percent using Microstation, and the remaining 20 percent divided among a dozen or so other programs, including FormZ for modeling and 3D stalwarts such as ArchiCAD, Architectural Desktop, DataCAD Plus, Revit, and VectorWorks Architect.

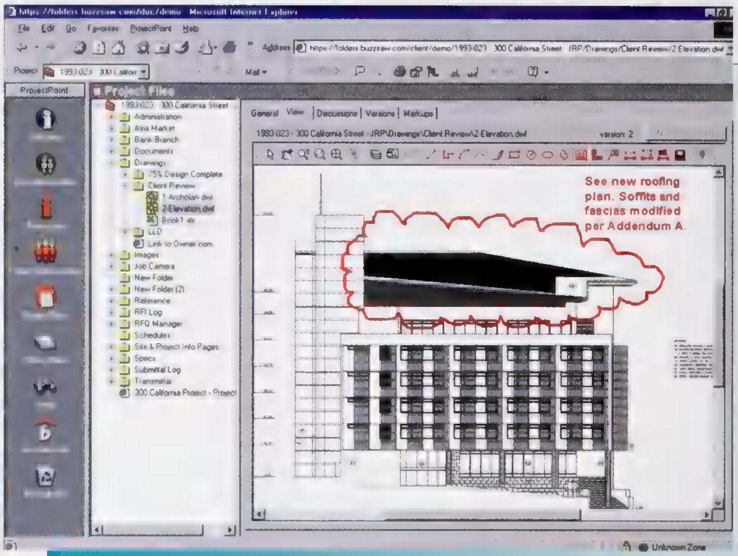
But especially among architects younger than 40, facility with multiple software tools is taken for granted—and increasingly, it's a skill necessary for advancement. "There is a subtle power shift from the senior technical people to younger people with CAD skills," observes Tim Rice, AIA, IS manager with LMN Architects, a 140-person firm in Seattle. "This is paralleled by a shift in power from our traditional marketing rainmakers to people who are wizards at creating graphics (e.g., Adobe Freehand, PhotoShop, and Illustrator) and desktop publishing (primarily Quark), and from our senior project managers to expert users of project-management software like Microsoft Project and Internet-based collaboration tools such as buzzsaw.com." Margulies sees software mastery as a training and career-development skill. "It is expected that everybody in the firm will be equally versed in all aspects of the computer, as well as design," he says. Like many other professionals, architects of the future will have no choice but to become fluent in a wide range of digital technologies.

Manage knowledge, not files

All the panelists agreed that using technology imposes information-management burdens, but firms must focus on higher-level knowledge and communication about their projects and practice. "Especially in a multioffice firm, the use of videoconferencing and intranets (internal Web sites) is essential for effective collaboration," notes Rothenberg. Rice stresses that CAD drawings and other information that architects work on electronically should be both understood and meaningful to all parties involved. "Younger architects must retain access to seasoned practitioners who know more about designing and building, while seasoned practitioners need exposure to the technology tools, even if this happens vicariously through their juniors," he says. Darren Rizza, director of IT at 165-person Payette Associates in Boston, seeks to avoid a common complaint at firms: Many architects who are expert users of CAD don't fully understand the building elements they design, while those who best understand design are not fluent in CAD. Payette is now embarking on a five-year internal knowledge-management project, which uses Architectural Desktop linked to a document management system and collaborative extranets (project Web sites).

Embrace standards

Adherence to standards for work processes and file sharing and formats ensures that multiple users can work together on the same project files, that design information can be shared with outside collaborators, and that files created today can be reworked when necessary. "I constantly monitor standards for digital work; otherwise, you can't assume files will be accessible in the future," says Koenigs. "What happens if your designer leaves the firm, or the client wants to remodel the building five years from now?" She is encouraged by efforts such as the National CAD Standard promulgated by the National Institute of Building Sciences (NIBS), which incorporates AIA's CAD Layer Guidelines and the Construction Specification Institute's (CSI) Uniform Drawing System. Margulies looks forward to the day when efforts such as the International Alliance for Interoperability (IAI) will allow him to "replace drawing deliverables with information deliverables—via 3D objects on the Web." This reality may be some time off, but architects and their technology providers are beginning to coalesce around such efforts.



See new roofing plan. Soffits and fascias modified per Addendum A.

Many architects believe that if they use externally hosted Internet applications, such as project administration via buzzsaw.com, they can focus more effectively on design, rather than on technology management.

Reuse information intelligently

All panelists acknowledged that detail libraries and project histories comprise the underutilized flipside of standards. "CAD drawings look so polished that less experienced architects may have no clue what they are copying when they start designing a new project," says McKinney. "We produce more drawings than ever before, so there's more information to look at—but to understand it, you have to piece together the designer's thought process, based on the logic of the drawing and file structure." Rice agrees that proper use of standard details is one area in which architects could show improvement. Intelligent reuse of field-proven information can improve quality and productivity.

Focus on making architecture

By streamlining the process of maintaining hardware, software, and files, firms are able to focus on the heart of practice—designing. Koenigs sees her firm moving to a subscription-based model for buying software and services, perhaps via application service providers (ASPs) hosting software over the Web. "Outsourcing saves time for our IT staff, so they can spend more time training architects how to use design tools, rather than managing our network," she says. Rizza is already experimenting with ASPs as part of his firm's knowledge-management project. Rothenberg believes ADD's intranet and extranet will be merged into a unified system that supports all of the practice's functions—projects, marketing, administration, and accounting—which would be accessible from every computer through standard Web browser software.

It's important to remember that technology in architectural practice is not an end in itself, but only a means to support the creation of quality design and the delivery of quality services. According to McKinney, "The system level of technology should be invisible. We try to focus on the process layer. Essentially, we are designing the environment for producing work." As the tools of the trade continue to improve, architects will find it easier to tailor technology to serve their needs. ■

IMAGE COURTESY BUZZSAW.COM

What If

"OK, Nick, let's talk fees here. Your engineering proposal is too high. This is not going to work."

"Well, Ned, we had to build in a buffer. I mean, I like you guys; your architects are sharp, nice to work with…but…your CAD files are a mess. You send us toilets on the furniture layer…and sinks with the landscape."

"CAD…really? Is that the problem?"

"It sure is. Remember the downtown project? We spent days fixing what you sent us. From now on, either we get paid a lot more, or I'm not interested."

"I see. And what if I told you there'd be no CAD coordination problems—and I mean, *none*?"

"I've heard that from you before. Sorry, the way you work is costing us way too much money."

"Nick, we're using Revit now."

"Revit? Should have said that before. That makes a difference."

"So you'll revise your proposal?"

"Sure. Just promise me one thing."

"What's that?"

"Don't ever go back."

"Think I'm crazy?"

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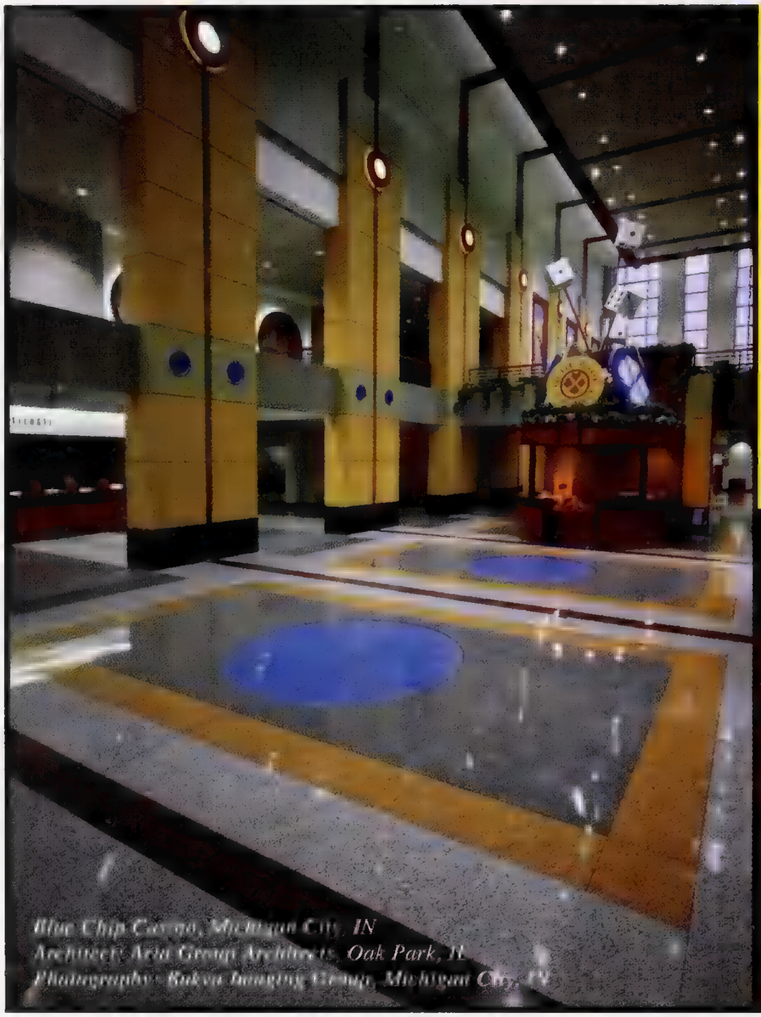
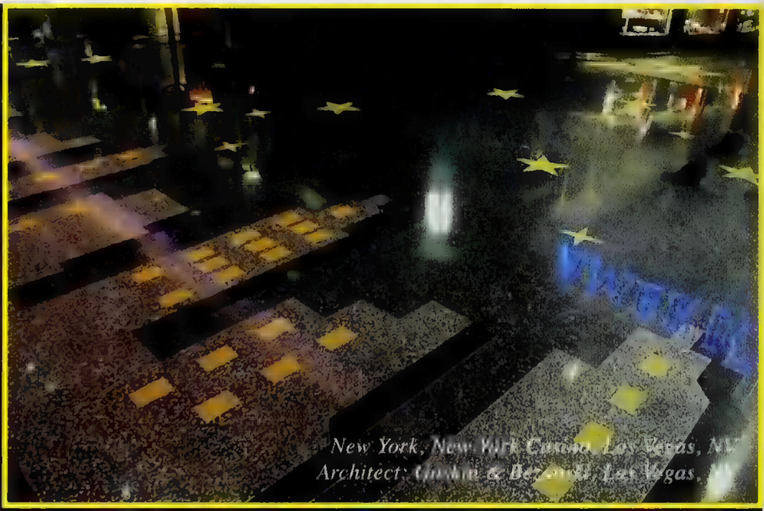


Blue Chip Casino, Michigan City, IN
Architect: Arca Group Architects, Oak Park, IL
Photography: Kukva Imaging Group, Michigan City, IN



New York, New York Casino, Las Vegas, NV
Architect: Gaskin & Bezanski, Las Vegas, NV

Motown Cafe at New York, New York Casino, Las Vegas, NV
Architect: Haverson Architecture & Design, Greenwich, CT
Photography: Opulence Studios, Las Vegas, NV

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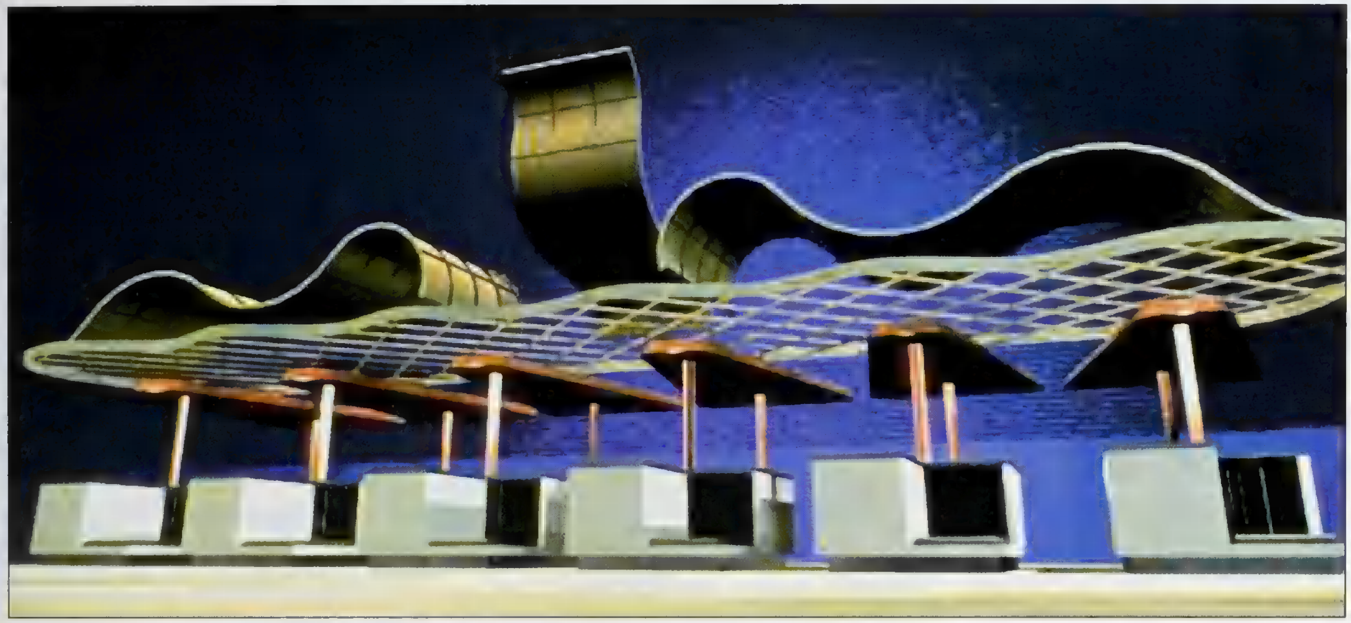


Curved ceiling design such as this computer-rendered ticket counter area is here to stay, thanks to new design software and innovative systems technologies

USG presents

DESIGNING CURVED CEILINGS: SYSTEMS MAKE THE PROCESS EASY, EFFICIENT AND ECONOMICAL

by: Rosa Lee, AIA
Marketing Manager
USG Corporation

CURVED BUILDING DESIGN IS NOT ONLY IN VOGUE, IT'S HERE TO STAY. THANKS to sophisticated new computer-aided design programs and innovative systems technologies, architects, construction professionals and manufacturers are now able to collaboratively create and implement curved wall and ceiling designs that were formerly either impractical or cost-prohibitive.

AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION Series

Use the learning objectives below to focus your study as you read **A COMPARATIVE GUIDE: UNDERSTANDING AND SPECIFYING ABUSE-RESISTANT WALL SYSTEMS**. To earn one AIA/CES Learning Unit including one hour of health safety credit, answer the questions on page 157 and follow the reporting instructions on page 204 Or, use the Continuing Education self report form located at www.architecturalrecord.com.

LEARNING OBJECTIVES:

- Describe different types of materials used to form curved ceilings.
- Explain how curved ceilings are created.
- Describe where different curved ceiling systems are used.

The "wow" effect of curved building design is undeniable. Consider the attention that architect Frank Gehry continues to receive for his design of the Guggenheim Museum, Bilbao, Spain, and some of his other more recent projects.

Central to Gehry's process are several important elements: unprecedented creativity, generous budgets and groundbreaking technology. To push the limits of curved building design, Gehry utilizes a powerful computer program called Catia (Computer-Aided Three-Dimensional Interactive Application). This software, originally developed to design fighter jets, is now used by Gehry's technicians in translating the complex curves he has in mind to plans that the builder can use on the job site. Every component is accounted for and every detail confirmed as buildable before construction begins.

Unfortunately, not all design firms have the funding, staff and technology that Gehry can deliver. However even without a full-time Catia technician on staff, most architects can still incorporate exciting, innovative curves into their projects – and do it easily, efficiently and economically – thanks to two factors: advances in computer-aided design technology and a new generation of products and systems that facilitates curved building design, especially in commercial interiors.

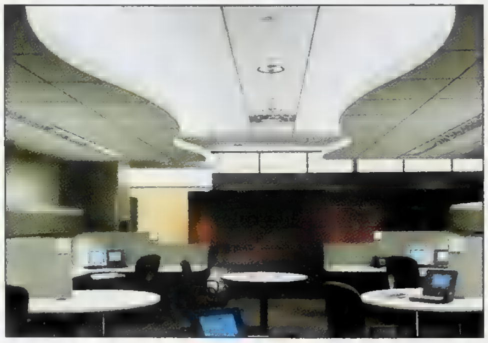
Designers are now using flexible, $^1/_4$-inch gypsum board panels combined with track systems to create elegantly curved walls. Bullnose paper faced metal bead and trim is taking the (90-degree) edge off wall corners. Curved modular office furniture, computers and accessories are adding energy and flow to desktops. And thanks to a combination of computer design programs and an innovative array of new integrated systems, 2-D and 3-D ceilings are lending curved dynamics, practical functionality and an expressionistic freedom to a wide range of interior spaces.

THROWING CEILINGS A CURVE

Nowhere in the commercial interior environment is the excitement and drama of curves more pronounced than in ceilings. Gone are the days when architects were limited to horizontal suspension systems and flat infill panels. There now are several types of ceiling systems that add depth and interest to an interior's "fifth plane," provide locations for lighting and signage, indicate room transitions, guide pedestrian traffic and more – all while incorporating curves into the room design. What's more, some of these systems offer architects computer-aided design technology that delivers a complete design/build solution, assuring that the architectural plan is not only buildable, but is constructed to precise design specifications. The four primary types of curved ceiling systems that are supported by computer-aided design technology are:

- Suspension trim (for use with specialty-type ceilings, as well as flat acoustical ceilings)
- Metal accent systems
- Curved metal ceiling systems
- Drywall suspension systems

SUSPENSION TRIM was first introduced to the marketplace about 12 years ago as a way to finish the straight edges of suspension systems. Manufacturers found, however, that they could produce curved components in steel or aluminum and in different heights to interesting effect. Suspension trim systems facilitate a number of key design and performance criteria, including:



Suspension trim enables the creation of free-form island ceilings and fascia.

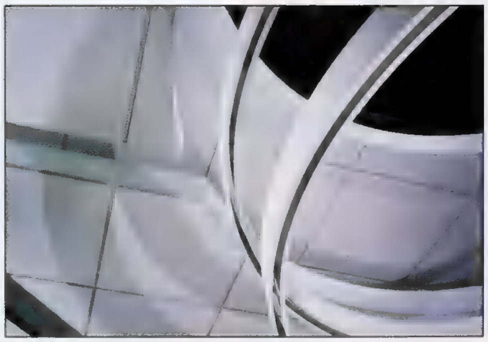
- The creation of free-form island ceilings or fascias that can be filled in with tile and grid to draw attention to and highlight specific areas within ceiling spaces.
- Acoustical sound control, accessibility and the use of lay-in fixtures.
- Various trim heights to create visual excitement and the illusion of varying ceiling thicknesses.
- Clean, crisp edges.
- Significant cost savings over conventional drywall soffit construction.
- Pre-engineered to design specifications, providing total design freedom for the architect and ensuring that the design is built to exacting detail.

Suspension trim can be used to create floating clouds, islands or layers of ceiling, and is often used in contemporary offices, retail stores, entertainment and gaming venues, as well as high-bay areas such as airports, lobbies and entryways.

Given the reality that standard curved components can never meet the specific design requirements for every project, manufacturers are now offering custom component design and production. This provides designers with complete design freedom. The most versatile systems are offered in custom finishes, and are pre-cut and numbered for faster installation. The ceiling contractor simply assembles the trim according to the numbered parts, which correspond to numbered instructions. Installations are typically completed using standard tools and techniques.

DESIGN TIP: *To minimize the effect of visible hanger wires on the job site, specify that they must be installed plumb, straight and neat. The spec should include instructions for uniform wire turns and pigtails trimmed close to the vertical wire. Alternatively, use aviation wire with a crimping sleeve. For open ceilings, try using 18 ga. hanger wire.*

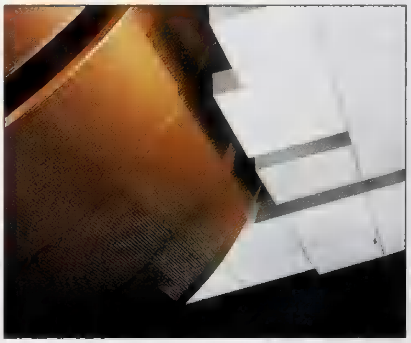
A recent twist on the suspension trim concept is the development of **metal accent** systems, which can be configured to create circles, straightaways, arcs, angles or spirals. Lighting and signage can be hung or mounted on the metal channels for way-finding and space-defining applications. The systems are available in various sizes, heights and reveals, and can be finished in any color.



Metal accent systems can be used for decorative, way-finding or space-defining applications.

Recently, suspension trim has evolved into even more sophisticated **curved metal ceiling** systems. Intended for visual impact and heightened aesthetics, these systems have made ceilings more expressive than was ever possible before. Available as a series of vaults and valleys in various radii, the range of different curved shapes and effects is nearly endless. Curved metal ceiling systems offer the following features and benefits:

- Curved main tee segments and flexible panels offer multiple variations for creating beauty and drama in interior spaces at affordable prices.
- Optional edge trim and access panels provide design versatility while meeting functional requirements.
- A broad choice of infill panels makes these systems desirable for a wide range of applications.
- They are designed and pre-engineered as a system to reduce labor costs.
- They are shipped in a kit to ensure that the design is constructed exactly as intended.



New one-directional infill panels lend a monolithic look to curved metal ceilings.

Infill panels are made from expanded metal or woven wire mesh in an anodized brass or steel finish, solid metal, perforated metal or translucent materials. Lighting can be integrated into the systems or placed behind the infills panels for transparent or luminous effects.

Some manufacturers offer curved metal ceiling systems customized to meet specific design requirements. All pieces are marked with "genetic codes" that correspond to an assembly sequence outlined in installation directions. These products install like conventional suspended ceiling systems, enabling experienced ceiling contractors to handle installation quickly and efficiently.

DESIGN TIP: *For the greatest creative latitude and assurance that the envisioned design will be successfully constructed on the job site, look for a curved metal ceiling system whose manufacturer offers AutoCAD®-compatible software for the system's design and specification. This software permits three-dimensional rendering on the computer screen, incorporates custom finishes and can be exported into the architect's rendering programs to create client presentation drawings. Just as importantly, the software will notify architects when they've created a system detail that cannot be executed due to space or component limitations.*

Recent line extensions to curved metal ceiling systems offer a narrow-faced, 9/16-inch profile grid with a slight reveal that provides a virtually non-interrupted ceiling plane. New, one-directional infill panels, which butt against each other to create an almost invisible seam, add further to the monolithic look.

Speaking of monolithic ceilings, it is now possible to create curved drywall ceilings easily and economically. In the past, drywall was used on either the flat surfaces of bulkheads or painstakingly wetted, scored and bent into curved shapes, which had to be left overnight to dry. The panels then were installed using hat channel steel, black iron suspension and GRG (glass-fiber-reinforced gypsum) ceiling shapes constructed on the job site. This involved process made curved drywall ceilings very expensive to install and rather unpredictable in terms of finished results.

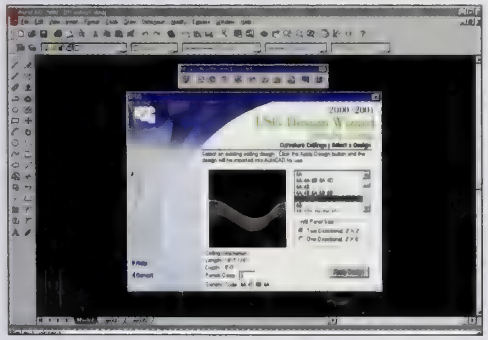
Thanks to recently developed drywall suspension systems, drywall vaults, valleys, arches and other curved elements – all cost-prohibitive only a few years ago – are now within reach for a wide range of projects. Like other specialty ceilings, these systems are supported by computer-aided design and pre-engineered component manufacturing. They accept $^{1}/_{4}$-, $^{1}/_{2}$- and $^{5}/_{8}$-inch drywall, and deliver the following features and benefits:

Drywall suspension systems facilitate the design construction of vaults, valleys and arches.

- Facilitate the design of vaults, valleys, arches and other curved drywall ceiling configurations, while dramatically reducing installation time and costs.
- Pre-engineered system components ensure that ceiling designs are constructed on the job site in exacting detail.
- Enable cost-efficient construction of curved and serpentine drywall soffits and fascia.
- Transition exceptionally well from soffits, flat drywall ceilings and even acoustical ceilings.

The technology used to develop drywall suspension systems is now being applied to systems that permit precise and economical construction of domes. Domed suspension systems are usually covered with plasters or plastics, but the end result is the same: versatile design capabilities, time-saving installation and exact reproduction of designs on the job site. ■

ADVANCED SOFTWARE MAKES ARCHITECTS WIZARDS AT CEILING DESIGN



USG Design Wizard for Ceilings

While not all architectural firms can invest the money and time required to utilize robust design software programs such as Catia, manufacturers and software designers do offer a variety of highly useful and time-saving computer-aided design systems.

A leading application is USG's Design Wizard for Ceilings. While the program is intended primarily for use with USG's ceiling products (both acoustical and specialty), it serves as an example of the powerful design tools currently available. The plug-in application integrates seamlessly with AutoCAD® 14, AutoCAD 2000 and AutoCAD 2000i to create accurate 3-D renderings and specifications within the architect's own drawings.

The software enables architects to start from scratch in designing a specialty ceiling or they may choose from and/or modify existing designs from a database of specialty ceilings. The resulting renderings are ideal for client presentations. The software also produces instant schematic drawings, providing contractors with a construction reference guide.

The USG Design Wizard is offered as a free download on the USG Web site.

CURVED CEILINGS MAKE AIRPORT A DRAMATIC DESTINATION

Like much of Las Vegas, the new Satellite D Terminal at the city's McCarran International Airport is all about atmosphere.

Dramatic ceiling heights, broad concourse walkways, vaulted skylights and a 58-foot-tall glass wall are highlights of the 684,000-square-foot facility. To define space and add visual drama, project architect Tate & Snyder Architects of Las Vegas made extensive use of USG's CURVATURA™ 3-D Ceiling System. Making the CURVATURA ceiling design a reality required intimate collaboration between Tate & Snyder Architects, ceiling contractor M&H Building Specialties, Inc., and USG.

"We supplied 175 different custom components for this project," said Greg Ahren, market development manager for USG's Specialty Solutions Group. "That included computer-designing, forming and custom laser-cutting all the transitional and trim components that enabled the design team and the contractor to pull this off."

The CURVATURA 3-D Ceiling System from USG adds drama and visual interest to the McCarran International Airport, Las Vegas, Nev.

NEW CEILING DOME SYSTEM DELIVERS SPECTACULAR RESULTS

The USG Drywall Suspension System saved hundreds of man-hours and ensured perfect results on the construction of 19 domes in Regent Auditorium, Pensacola.

The Regent Auditorium, a new $90-million educational facility located in Pensacola, Fla., has set a high standard for creativity and engineering excellence in domed ceiling construction.

Designed by Strobel & Hunter, Inc., the 300,000 sq. ft. auditorium features an amazingly complex ceiling treatment, incorporating domes, curved barrel vaults and a huge saw-tooth suspended ceiling.

The ceiling elements were created using USG's Drywall Suspension System. Custom-engineered tees and crosspieces were developed by USG's Specialty Solutions Group to meet the exact specifications created by Strobel & Hunter. The components were shipped to the job site, where Acousti Engineering of Florida handled installation.

Steven Capps, project manager/estimator for Acousti Engineering, estimates that the efficiency of the USG system shaved 72 man-hours off the installation of each of the 10 18-foot-diameter domes, and 37 man-hours off the installation of each of the nine 12-foot domes.

"I've never seen domes that look this good," said Capps.

WALLS THAT FLOW

Creating curved gypsum board walls has been greatly facilitated by the development of flexible, 1/4-inch-thick drywall panels. Typically applied in double layers, the thinner, flexible panels eliminate the scoring and wetting procedures usually required to create curved walls using conventional gypsum panels.

To create rounded drywall corners, paper faced metal bullnose tape-on corner bead offers a simple solution. Joint compound is used to adhere the tape-on style bead to wall surfaces, so nailing – and nail pops – are eliminated. The paper tape covering the metal bullnose profile ensures excellent adhesion of joint compounds, textures and paints for a strong, smooth finish. USG backs its SHEETROCK™ Brand Paper Faced Metal Drywall Bead and Trim with a lifetime warranty against edge cracking.

Flexible 1/4-inch-thick SHEETROCK Brand Gypsum Panels facilitate curved drywall applications.

TABLE 1: MINIMUM BENDING RADII FOR FLEXIBLE 1/4-INCH GYPSUM BOARD PANELS

Application	Condition	Lengthwise Bend Radii	Max. stud spacing	Widthwise Bend Radii	Max. Stud Spacing
Inside (concave)	Dry	32"	9" o.c.	20"	9" o.c.
Inside (concave)	Wet	20"	9" o.c.	10"	9" o.c.
Outside (convex)	Dry	32"	9" o.c.	11"	6" o.c.
Outside (convex)	Wet	15"	6" o.c.	7"	6" o.c.

NOTE: Bending specifications are for USG's SHEETROCK™ Brand 1/4 Inch Flexible Gypsum Panels tested at 65 degrees Fahrenheit and 45 percent relative humidity.

MORE TO COME

The four basic curved ceiling systems described above are, no doubt, just the beginning of things to come. As clients continue to ask for curves and architects can more freely add them to their plans, manufacturers and computer design software developers will continue to push the curved ceiling envelope.

Curved ceilings may soon become a focal point in and of themselves, much like Michelangelo's painted barrel vaults were more than 400 years ago. And that would bring curves around full circle, so to speak, as a crucial element in ceiling design. The big difference however, is that today's curved ceilings are no longer relegated to Sistine Chapel-type construction. Thanks to computer design technology and the systems approach, curves can flow everywhere.

ABOUT USG

USG is a Fortune 500 company with subsidiaries that are market leaders in their key product groups: gypsum wallboard, joint compound and related gypsum products; cement board; gypsum fiber panels; ceiling tile and grid; and building products distribution.

For more information about the company's ceiling systems, write USG at P.O. Box 806278, Chicago, IL 60680-4124, call USG's Customer Service Department at 1-800-USG-4YOU or visit the company's Web site at www.usg.com.

LEARNING OBJECTIVES

- Describe different types of materials used to form curved ceilings.
- Explain how curved ceilings are created.
- Describe where different curved ceiling systems are used.

INSTRUCTIONS:

Refer to the learning objectives above. Complete the questions below. Then turn the page upside down and check your answers. Fill out the self report form on page 204 and submit it or use the Continuing Education self report form on *Record's* web site - www.architecturalrecord.com - to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS:

1. Where are suspension trim ceilings used?

2. What are the benefits of using curved metal ceilings?

3. What type of designs use drywall suspension systems?

4. What ceiling type is used to create a monolithic look?

5. How can computer software aid architects in designing curved ceilings?

ANSWERS:

1. Suspension trim ceilings are normally used in places with high ceilings where visual effects are desirable. These are usually lobbies or entryways in commercial venues. Installations are typically in retails stores, entertainment areas, gaming halls and airports. Suspension trim is used to create floating clouds or layers of ceiling to draw attention and highlight specific areas within ceiling spaces.
2. Curved metal ceiling systems offer benefits in installation and design. The installation benefits are that they are shipped in a kit to ensure that the design is constructed exactly as intended and they are designed and pre-engineered as a system to reduce labor costs. The design benefits are that they offer flexible panels and curved main tee segments, as well as optional edge trim and access panels for creating design versatility. The infill panels can be made of solid or perforated metal or translucent materials, allowing lighting to be integrated into the system.
3. Drywall supension systems are used to create vaults, valleys, arches and other curved elements. They transition well from soffits, flat drywall ceilings and even acoustical ceilings.
4. In the past, monolithic looks were created from drywall that was wetted, scored and bent into curved shapes. This was time consuming, with unpredictable results. Now, the smooth monolithic look can be created using drywall suspension system ceilings. These use standard thicknesses of drywall with pre-engineered components. Another way to create monolithic looks is from a narrow profile metal ceiling grid with a slight reveal. One-directional infill panels butted against each other create an almost invisible seam, adding to the monolithic look.
5. Using computer software, an architect can select a ceiling design from a database of speciality ceilings or sketch a curved element on the computer screen, selecting grid size and suspension profiles. The software program then generates a precise design and corresponding specifications, schematic drawing, renderings and a construction reference guide.

USG

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UNDERSTANDING URETHANE MILLWORK

Decorative urethane entryway surrounds enhance the look of any style home.

In years past, when trimwork was needed on a home or building, the first, and often only, choice was wood. Since the 1970's that situation has changed. Urethane millwork products — made from high-density polyurethane — are available to enhance the interior and exterior of both residential and commercial projects.

While wood trims are widely available and have a good aesthetic value, they have several disadvantages. Susceptible to decay, rot and warping in a variety of climates, wood millwork can become infested with termites. And, although wood offers warmth and beauty to a project, it requires stripping, repainting and intense maintenance.

Currently available in thousands of profiles from a variety of manufacturers, urethane millwork products have been applauded for their ease of installation and low maintenance features. An intricate decorative crown moulding, which could take days to construct from wood, can now be manufactured as a single piece of urethane — and installed in minutes.

Naturally resistant to decay, splintering and insect infestation, urethane products have a closed cell structure that prevents water penetration and absorption. Urethane millwork is ideal for all types of climates ... from areas that experience extreme cold temperatures and harsh weather to those receiving an abundance of rain, salt spray and searing temperatures. The precision molded, high-density pieces are manufactured using a two-component rigid polyurethane foam system.

Urethane millwork pieces can replicate intricate patterns on ceiling medallions or contain smooth, seemingly endless lines on mouldings. One of the chief assets of urethane is its ability to gain highly detailed, authentic looking reproductions of historic products. A heavy, ornate plaster ceiling medallion can easily be replicated in a urethane piece weighing under a pound. And, for those projects requiring the "look of wood" many manufacturers offer stainable urethane mouldings containing authentic wood grains.

Overall, compared to wood, plaster and concrete decorative trim products, urethane millwork generally has lower product and installation costs. The appealing low maintenance aspects of urethane millwork, coupled with the product's resistance to water and insect infestation have helped the product grow in popularity.

AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION Series

Use the learning objectives below to focus your study as you read **UNDERSTANDING URETHANE MILLWORK**. To earn one AIA/CES Learning Unit including one hour of health safety credit, answer the questions on page 163 and follow the reporting instructions on page 204. Or, use the Continuing Education self report form located at www.architecturalrecord.com.

LEARNING OBJECTIVES:

After reading **UNDERSTANDING URETHANE MILLWORK** you will be able to:

- Explain the benefits of urethane over wood for trim.
- Describe where urethane millwork is used.
- Explain why urethane millwork is popular in interiors.
- Describe how urethane millwork is made.

HOME AND COMMERCIAL USE

Available as both decorative and structural products, urethane millwork is so diversified that a single home can employ the product as window and door trim, louvers, porch balustrade systems, eave vent systems, interior and exterior moulding, ceiling medallions and wall niches.

These same products can be used in commercial applications. A college dormitory, nursing home or restaurant trimmed out with urethane pieces will require minimal maintenance and gain years of top quality product benefits. Since most manufacturers offer urethane millwork products in a smooth finish with an exterior grade ultraviolet (UV) stable coating applied, paints are easily accepted.

UNLIMITED EXTERIOR PRODUCT SELECTION

Almost any decorative element an architect can imagine is available in urethane. Generally, most manufacturers offer a variety of product categories in their technical and product catalogs to make life easy for architects.

In the entrance trim category architects find pilasters, pediments, crossheads and trim to surround entryways. Decorative accessories, such as bottom trim, dentil trim, keystone and trim strips can enhance the shadow lines and look of an entrance way surround.

When it comes to window trim for homes and commercial structures, urethane manufacturers offer an assortment of decorative pieces including crossheads, sunburst and half round pediments and arches. For the easiest window trim possible, miterless window surrounds can be achieved by using plinth blocks/rosettes in the corners and butt joining window moulding between them.

Raised urethane window panels can be specified below a window to give more depth to its overall look. By surrounding the window and panel completely with moulding and topping off with a crosshead and pediment, the window can become a focal feature of the structure.

When specifying louvers, look no further than urethane. Easily one of the most requested products from manufacturers, urethane louvers come in both functional and decorative styles. Solid, one-piece functional louvers incorporate a screen backing (some manufacturers use a non-corrosive fiberglass screen for long-term minimal maintenance), which keeps insects out, while allowing maximum airflow. Decorative louvers do not allow air to pass through and are intended to create visual interest in the peaks and gables of a home.

Another innovation applauded by the industry as a time saver is urethane eave vent systems. Form and function combine with these sensible, cost-saving products. Eave vent systems serve the dual purpose of providing a functional venting system that prolongs roofing shingle life with a decorative moulding profile.

To complete the exterior of project, consider specifying urethane balustrade systems. Balusters are reinforced with fiberglass or aluminum, while rails and newels have PVC reinforcements and porch posts have steel reinforcements. All balustrade parts are made with noncorrosive parts that are totally hidden to provide a clean, classic appearance from any angle. Balustrade systems stay beautiful without the heavy demands of continuing maintenance.

DECORATIVE BEAUTY

Urethane companies offer authentic architectural profiles in everything from uncluttered simplicity to extremely ornate designs. Ideal for both interior and exterior use, there are hundreds of decorative urethane millwork options including corbels, acorns, wall niches and brackets.

Fishscale panels, gable pediments, dentil blocks and other millwork pieces add a special decorative touch to the outside of a home. Many of these elegant pieces replicate the Victorian era and are complemented by interior mouldings and ceiling medallions.

Available in long lengths, urethane mouldings are easy to install and range from simple two-inch tall pieces to intricate built-up combinations that can reach over a foot high. Hundreds of profiles exist to replicate a wide variety of designs and styles. Some of the most popular mouldings include dentil profiles, cornice and cove, crowns, chair rails and window/door trim. More elaborate egg and dart, crown leaf, ribbon and bow, Florentine and scalloped moulding profiles are also available. Moulding accessories, including miterless corners, plinth blocks/rosettes, keystones and moulding divider blocks, are widely available.

MAKING URETHANE PRODUCTS

To manufacture a piece of urethane millwork, a company creates a wood master of the design selected. Next, silicone is poured around the original wood master to create a production mold (see photo A).

Photo A

A nozzle dispenses liquid urethane into the production mold, which has been painted with a barrier coat (see photo B).

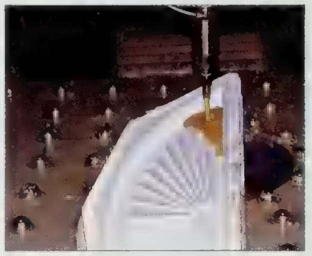


Photo B

A lid is then placed over the mold, trapping in the liquid urethane. The mold is placed under pressure and the urethane quickly expands to fill the mold. Once set, the molded part is removed from the production mold (see photo C).

Photo C

Next, the high-density urethane piece is treated like wood. Each piece is hand inspected, sanded and cut to finished size. The piece is then primed and ready for packaging (see photo D). All pieces are carefully inspected prior to packaging to assure that the finest quality product is shipped.

Photo D

Advertising supplement provided by **Style Solutions™, Inc.**

FINISH OPTIONS

Installed pieces of urethane may be painted with any good quality latex or oil base paint. One coat of paint is usually sufficient on pieces that come with a primed topcoat. Urethane pieces also accept decorative faux finishes exceptionally well. For stainable pieces with a woodgrain, a non-penetrating, high quality stain can be applied.

A unique real metal finish, METALLON™, is available exclusively from Style Solutions™ Inc. as an upgrade option on the company's interior and exterior urethane products. Available in copper, brass, nickel and bronze, the METALLON finishes transform urethane products to serve as a unique accent in both commercial and residential settings.

LIMITATIONS AND BUILDING CODES

While urethane millwork products are ideal for all types of climates, they should never be stored for a long period of time in extreme heat. Most urethane millwork products can withstand temperatures of about 140 degrees F. However, the millwork should never be specified in an area subject to solar temperature buildup, such as behind a storm door.

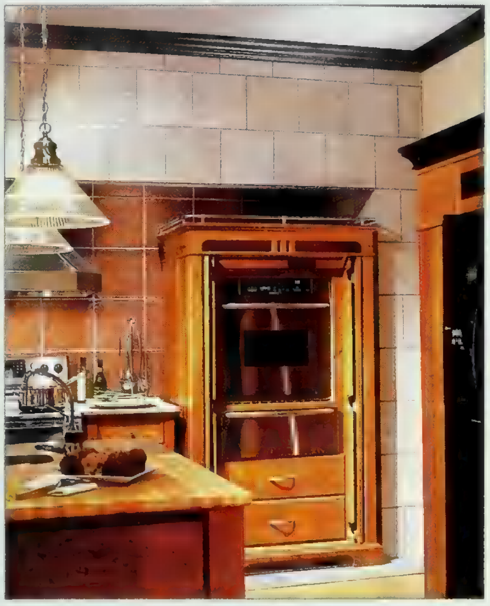
Unless specifically noted by a manufacturer, most urethane millwork products are for decorative use only and have no structural integrity. Balustrade systems, with uPVC, fiberglass and steel support systems, are the exception.

Most urethane millwork products are not specifically formulated for fire resistance. Check with individual manufacturers for additional flame resistance restrictions and for special product orders that meet Class 1 ratings. Architects will find that most urethane products produced by manufacturers can safely be used in accordance with SBCCI, BOCA, CABO and NFPA rulings.

Durable high-density urethane trim pieces on the exterior of a home resist decay, water and insect penetration.

CASE STUDY#1: METALLON™ FINISHES CAPTURE INTEREST

Glowing copper METALLON™ real metal finish on this urethane moulding allows the trim to play a major role in the room.



Hand-rubbed bronze METALLON™ on Style Solutions™ crown moulding completes the upscale design of this kitchen.

Designers and architects looking for new products and trends at the recent 2001 Kitchen/Bath Industry Show didn't strike gold at the show — instead they struck brass, bronze, copper and nickel. New METALLON™ real metal finishes available on Style Solutions urethane millwork products quickly became the "talk of the show" for designers looking to add metal accents to kitchens and bathrooms.

"When members of our staff attend K/BIS we're looking for the up-and-coming trends ... and I found one when I entered the Style Solutions booth," says Meg King with The Evans Group in Orlando, Florida. "I can easily see that millwork with METALLON finishes would add a great deal of versatility to kitchens and bathrooms. Imagine the appeal of having a wall niche in a bathroom that has a copper green patina finish. This could create an Old World charm and richness that would be balanced throughout the room with other designer accents."

Resistant to temperature extremes and decay, urethane millwork products are ideal for kitchens and baths, where humidity can be a problem.

"The introduction of the METALLON finishes could not be better timed," according to show attendee Terri Berlage, design consultant with Mary Jo Peterson, Inc. in Brookfield, Connecticut. "Metals are hot right now. Whether it's copper accents in a kitchen or brass pieces in a bathroom, people are definitely emphasizing metal more throughout the home.

"The METALLON finished products look extremely promising as designer accents. I can easily see using a crown moulding with a nickel finish in a bathroom where the faucets and lighting fixtures have a satin nickel finish. This allows us to design a more 'complete' looking room."

Available as an upgrade option exclusively on urethane millwork products by Style Solutions, METALLON is cold spray applied and contains over 95 percent real metal.

"The antiqued brass and hand-rubbed bronze METALLON finishes on Style Solutions mouldings really impressed me," says Janelle Anderson, ASID, allied member with Design By Janelle in Amesbury, Massachusetts. "The METALLON finish absolutely transforms the millwork. There's a richness to it that I think consumers will want to capture for their homes."

CASE STUDY#2: URETHANE PRODUCTS ENHANCE RIVERVIEW HEALTHCARE COMMUNITY

Incorporating dozens of urethane balustrade systems, corbels and brackets from Style Solutions, the Riverview Health Care Center resembles a stately hotel.

When Health Concepts of Providence, RI decided to build an assisted living center on the banks of the Pawtuxet River, the owners envisioned a stately, elegant looking facility. Creating an environment that was comfortable, yet prestigious, was very important to the overall feeling of this special building.

Designed "with a view toward living," Riverview Healthcare Community in Coventry, RI boasts private living spaces, indoor and outdoor porches and an impressive array of balconies. To help create this peaceful environment, Health Concepts turned to Style Solutions™ Incorporated for the expansive urethane balustrades, corbels and detail work on the exterior of the building.

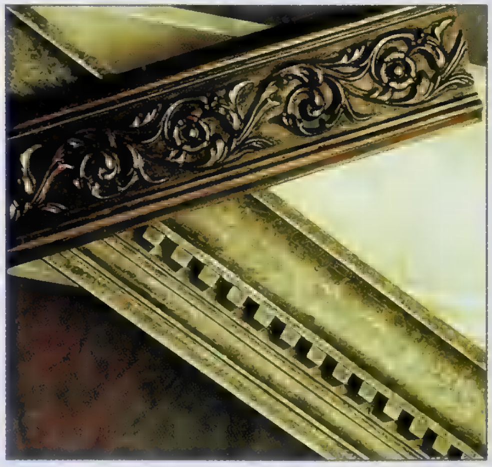
"We created Riverview to impart a sense of living in an elegant manor … and the Style Solutions products selected support and enhance that feeling," according to Kevin Ryan, marketing director of Health Concepts.

"The impressive array of Style Solutions products used on this facility were chosen for their durability and low maintenance virtues. We expect this building to look as regal and pristine 20 years from now as it does today."

The facility, which prides itself on resembling a stately hotel, boasts three levels of balustrade systems, dozens of elegant corbels and finely crafted Style Solutions pieces.

FINISHING OPTIONS RECOMMENDED BY STYLE SOLUTIONS™

Stainable urethane mouldings with realistic wood grains are an ideal low-maintenance alternative to real wood mouldings.



Urethane millwork products come with a smooth finish that easily accepts a variety of high-end faux finishes.

Copper METALLON™ with a green patina finish transforms this Style Solutions corbel.

LEARNING OBJECTIVES:

After reading **UNDERSTANDING URETHANE MILLWORK** you will be able to:

- Explain the benefits of urethane over wood for trim.
- Describe where urethane millwork is used.
- Explain why urethane millwork is popular in interiors.
- Describe how urethane millwork is made.

INSTRUCTIONS:

Refer to the learning objectives above. Complete the questions below. Then turn the page upside down and check your answers. Fill out the self report form on page 204 and submit it or use the Continuing Education self report form on *Record's* web site - www.architecturalrecord.com - to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

1. For what exterior applications could you specify urethane products?
2. How is the trim installation process changed by using urethane products?
3. What are the benefits of using urethane millwork products over traditional products?
4. Why has urethane millwork become popular for interior trimwork?
5. How is urethane millwork made?

ANSWERS

1. Urethane products are available with an exterior grade ultraviolet stable coating applied. This makes urethane millwork good for use as window and door trim, louvers, porch balustrade systems, eave vent systems, and decorative moldings such as pediments, dentil molding, arches, plinth blocks and rosettes, or Victorian fishscales.
2. Urethane products are lightweight, so they install faster and easier than wood, concrete, or plaster. Since urethane mouldings are produced as one piece they come to the job site in long lengths, ready to finish and install. This reduces the time of assembling complex moldings from small wood pieces. Urethane millwork accepts paint and decorative faux finishes, as well as stains and metal finishes.
3. The benefits of using urethane millwork are plenty. One of the chief assets is its ability to replicate historic designs with great detail. It weighs much less than the original details made of plaster or wood. It requires less installation time. Urethane millwork requires much less maintenance than wood, especially in harsh climates with salt, humidity, or extreme temperatures. It is not susceptible to moisture, decay or insect infestation as wood is.
4. Interior use of urethane trim allows an inexpensive way to accomplish the look of rich wood molding on crown moldings at the ceiling, chair rails, cornices above windows, and wall niches. It is also used for decorative styling on window and door trim. The recent trend in kitchen design toward European Old World look makes the decorative moldings very popular. This look incorporates use of metals in copper, bronze and nickel, which can be applied to urethane trim to provide desirable accents.
5. Urethane millwork products are made from high-density polyurethane. A production mold is made from a master design in wood. Silicone is poured around the wood master to create the production mold. Liquid urethane is poured into the production mold. A lid is placed on the mold and it is placed under pressure so that the urethane expands to fill the mold. After it has set, the urethane piece is removed from the mold and sanded or cut to size, then primed.

Style Solutions™ Incorporated

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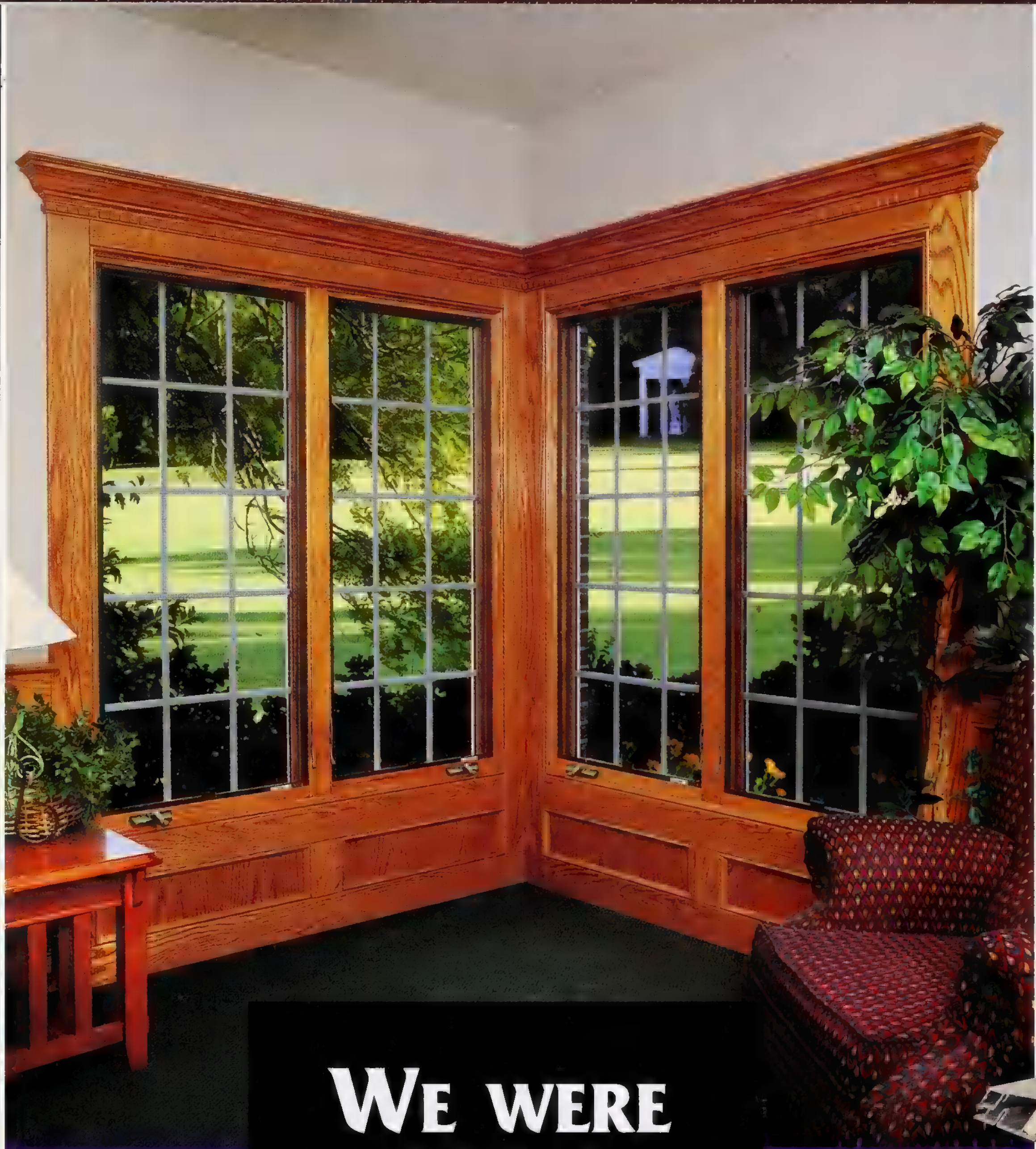

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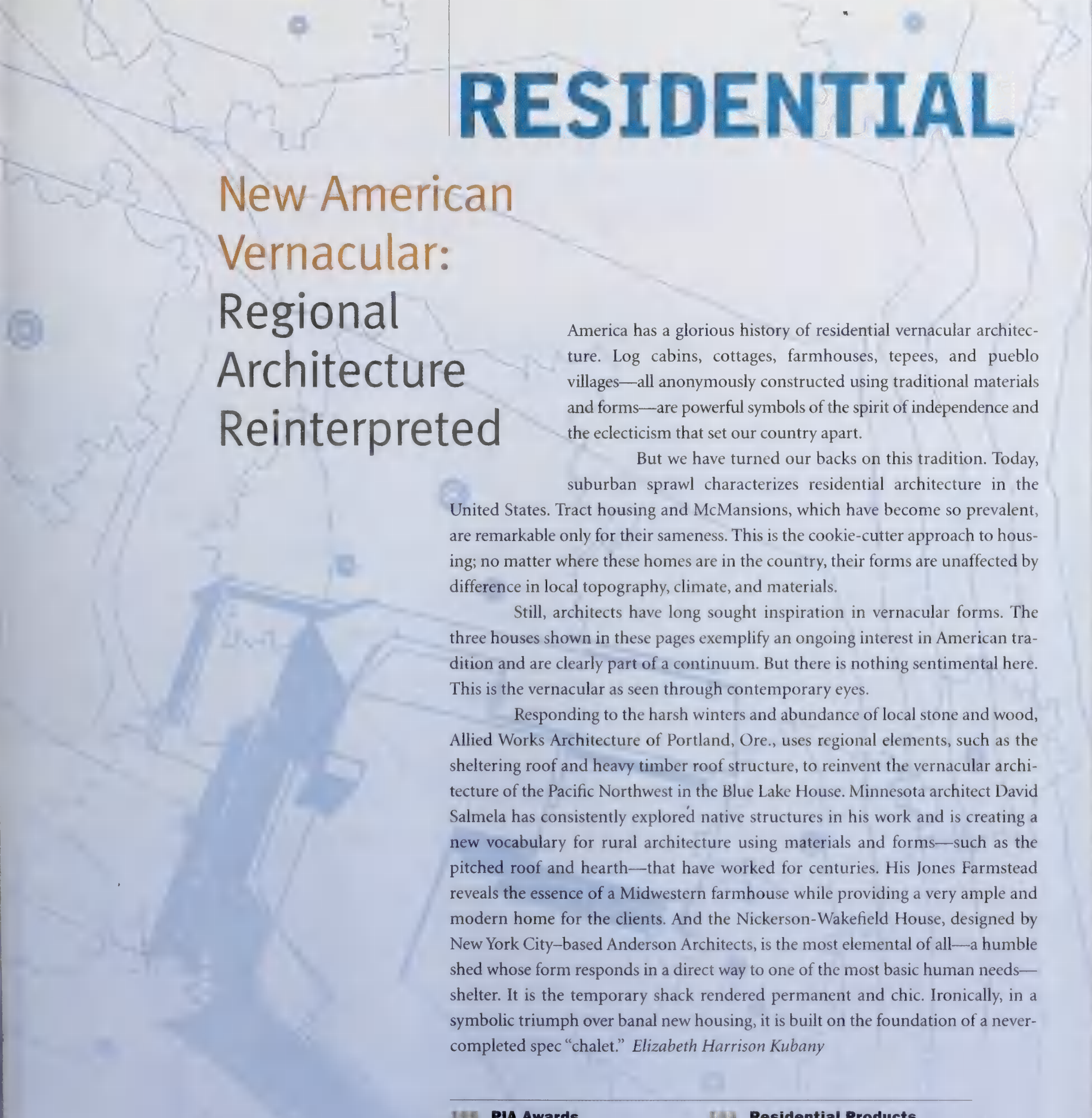


RESIDENTIAL

New American Vernacular: Regional Architecture Reinterpreted

America has a glorious history of residential vernacular architecture. Log cabins, cottages, farmhouses, tepees, and pueblo villages—all anonymously constructed using traditional materials and forms—are powerful symbols of the spirit of independence and the eclecticism that set our country apart.

But we have turned our backs on this tradition. Today, suburban sprawl characterizes residential architecture in the United States. Tract housing and McMansions, which have become so prevalent, are remarkable only for their sameness. This is the cookie-cutter approach to housing; no matter where these homes are in the country, their forms are unaffected by difference in local topography, climate, and materials.

Still, architects have long sought inspiration in vernacular forms. The three houses shown in these pages exemplify an ongoing interest in American tradition and are clearly part of a continuum. But there is nothing sentimental here. This is the vernacular as seen through contemporary eyes.

Responding to the harsh winters and abundance of local stone and wood, Allied Works Architecture of Portland, Ore., uses regional elements, such as the sheltering roof and heavy timber roof structure, to reinvent the vernacular architecture of the Pacific Northwest in the Blue Lake House. Minnesota architect David Salmela has consistently explored native structures in his work and is creating a new vocabulary for rural architecture using materials and forms—such as the pitched roof and hearth—that have worked for centuries. His Jones Farmstead reveals the essence of a Midwestern farmhouse while providing a very ample and modern home for the clients. And the Nickerson-Wakefield House, designed by New York City–based Anderson Architects, is the most elemental of all—a humble shed whose form responds in a direct way to one of the most basic human needs—shelter. It is the temporary shack rendered permanent and chic. Ironically, in a symbolic triumph over banal new housing, it is built on the foundation of a never-completed spec "chalet." *Elizabeth Harrison Kubany*

[illegible] **PIA Awards**

[illegible] **Blue Lake House**
Allied Works Architecture
174 **Jones Farmstead**
Salmela Architect
[illegible] **Nickerson-Wakefield House**
Anderson Architects

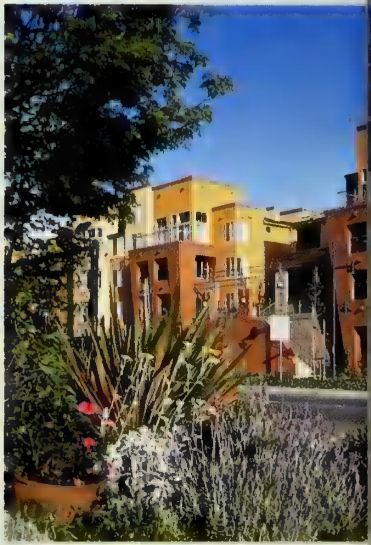
[illegible] **Residential Products**
Kitchen/Bath Show Review

The American Institute of Architects announces the 2000 Housing Professional Interest Area (PIA) Awards

MULTIFAMILY HOUSING AWARD

Livability and social responsibility characterize the winners in this category. In the case of Bridgecourt, the jury applauded "the vision of the developer in creating high-quality housing and retail in a run-down, crime-ridden urban area." The forms and materials of 8th and Alexander "give a dignity and permanence unusual for affordable housing." The "diverse cultural character" of the neighborhood is celebrated at Gateway Commons. And Jake's Run Condominiums, located in Portland's densest residential area, is a refined and graceful infill project in a historic district.

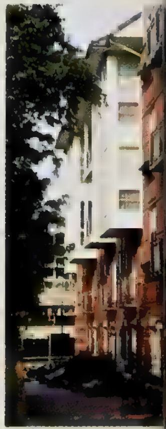
Project: *8th and Alexander*
Location: *Charlotte*
Architect: *David Furman/Architecture, PA*
Owner or developer: *Bank of America, Community Development Corporation and Charlotte Housing Authority*



COMMUNITY DESIGN AWARD

The jury gave its nod to sensitive planning, both urban and rural, in selecting the winners of the community design award. The judges thought that Swan's Market Place addressed "the urban streetscape in an especially interesting and successful manner" and called it "a tremendously complex program expressed in a confident, even exuberant manner." Using vernacular forms, materials, and detailing, Jackson Meadow "reinforces the sensitive site planning while establishing an elegance of form." Finally, the judges noted "the high quality of the urban space" at Addison Circle.

Project: *Jackson Meadow—Marine on St. Croix*
Location: *Marine on St. Croix, Minn.*
Architect: *Salmela Architect/Coen + Stumpf & Associates*
Owner or developer: *Harold Teasdale & Robert Durfey*



In association with ARCHITECTURAL RECORD magazine, the AIA Housing PIA established the Housing PIA Awards program to recognize the importance of good housing as a necessity of life, a sanctuary for the human spirit, and a valuable natural resource. This, the inaugural year of the program, included categories for single-family housing, multifamily housing, community design, and innovation in housing design. The jury only recognized winners in the multifamily and community design categories. According to William H. Kreager, AIA, of Mithun Partners in Seattle, who chaired the jury, "The real goal of this annual awards program is to recognize high-quality design in the for-sale market. We want to raise the bar and continue to improve the housing available to the American public."

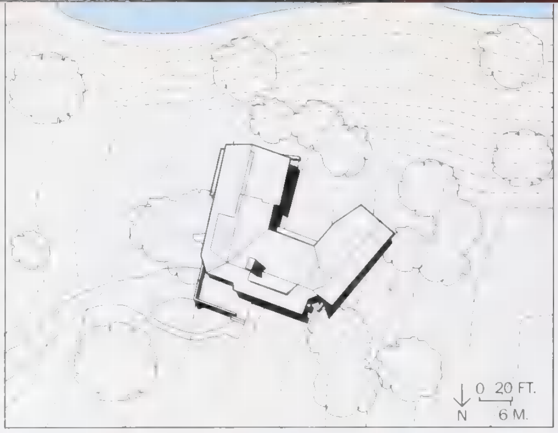
roject: *Bridgecourt*
ocation: *Emeryville, Calif.*
rchitect: *McLarand, Vasquez &*
artners
lient: *Catellus Residential Group*

Project: *Gateway Commons*
Location: *Emeryville and Oakland, Calif.*
Architect: *Pyatok Associates*
Owner or developer: *Oakland Community Housing and Community Development Corporation of Oakland*

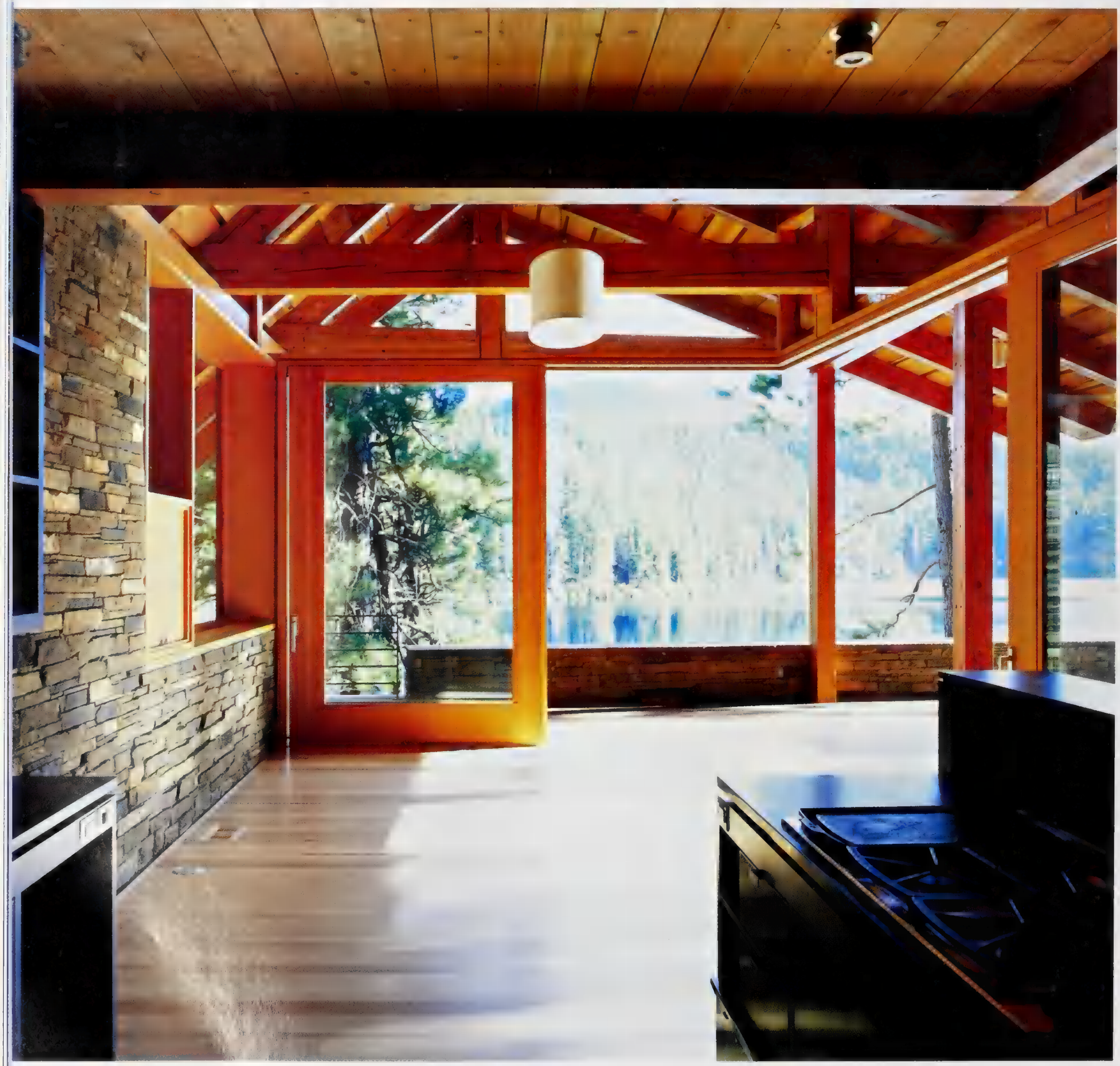
Project: *Jake's Run Condominiums*
Location: *Portland, Ore.*
Architect: *Fletcher Farr Ayotte PC*
Owner or developer: *Nick Stearns Development*

Project: *Addison Circle*
Location: *Addison, Tex.*
Architect: *RTKL Associates*
Owner or developer: *Post Properties*

Project: *Swan's Market Place*
Location: *Oakland*
Architect: *Michael Pyatok, FAIA*
Associate Architect: *Y.H. Lee*
Owner or developer: *East Bay Asian Local Development Corporation*



The house's palette of substantial materials is softened by moments of transparency. Despite massive two-foot-thick sandalwood stone walls and a deep overhanging roof (right), the boundaries between inside and out are ambiguous. Blurring the distinction, a huge glass door opens to the outside and wood floors continue from inside to out (below).



Allied Works Architecture gives Pacific Northwest vernacular an entirely modern twist in its Blue Lake House

By Sheri Olson, AIA

Vertigo is not ordinarily associated with water, but Blue Lake, a spring-fed extinct volcano, dazzles from a site 70 feet above its surface. Allied Works Architecture, based in Portland, Ore., draws on such exhilarating unease by creating a weekend retreat perched on the lip of this caldera. The design inserts tension into ordinary regional elements, such as a great pitched roof and heavy-timber structure, reinvigorating the vernacular of the Pacific Northwest.

High in Oregon's Central Cascades, the house shares an 80-acre site with a nonprofit arts-and-environment camp that the clients, Bonnie and Dan Wieden, founded for at-risk youth. Though Allied Works had produced a Minimalist design for the husband's company, the Portland headquarters of Wieden + Kennedy (the ad agency that put the swoosh in Nike), Brad Cloepfil, AIA, partner-in-charge of the house project, had something more traditional in mind for the Wiedens' vacation home. He was seeking, he says, "the material and spatial qualities that clients often associate with vernacular architecture."

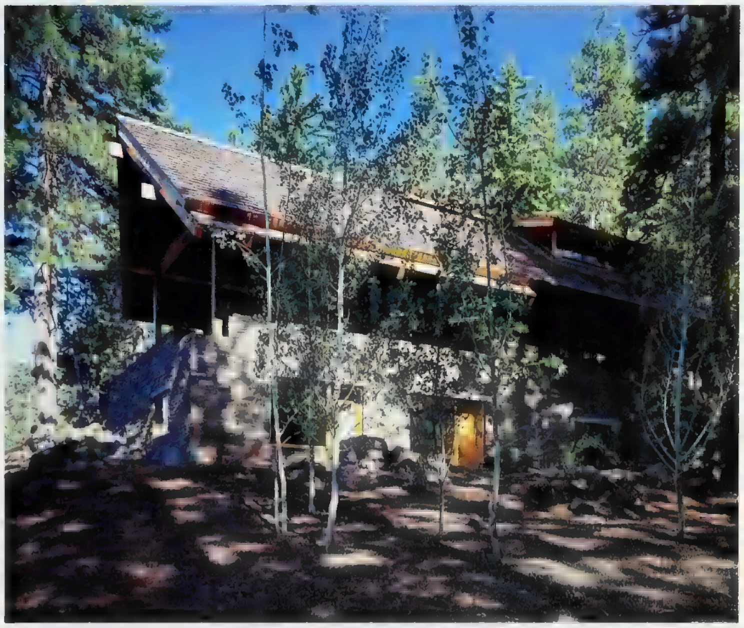
Before translating these qualities into the language of Modernism, he began by developing a sense of shelter, both physically and psychologically, with two-foot-thick stone walls and an overriding roof. He created a U-shaped structure, wrapped on its three outermost sides by this wall, forming a shield of stone in the woods that embraces southern views of the icy water 70 feet below and Mt. Washington beyond. As Cloepfil puts it, "You feel held in the landscape."

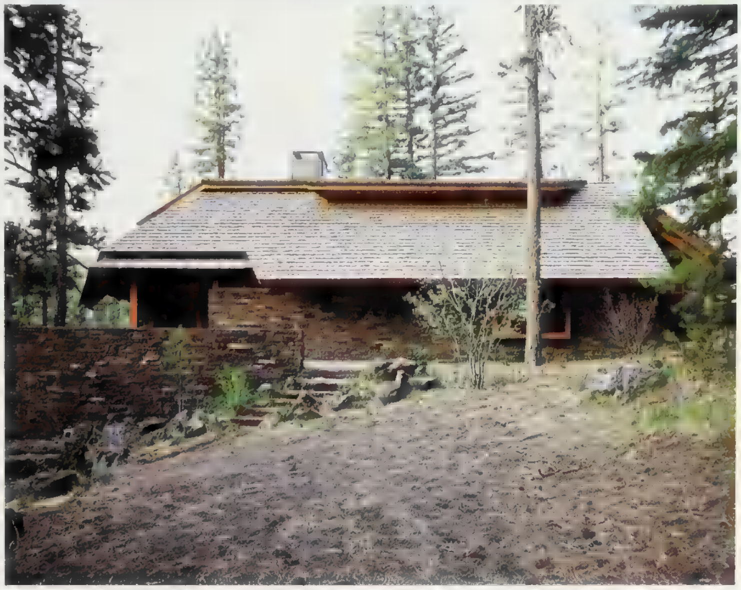
The house's exterior shell has no right angles. One leg of the U is shifted a few degrees to block views of houses across the lake while the facing leg splays slightly in the opposite direction. The result is a precise balance between openness and enclosure. The front door is nestled within a break in the wall at an outside corner of the U—a placement that undercuts the anchoring qualities of the stone, thus energizing the design with a tension between solidity and transparency.

In keeping with the existing topography, a series of platforms steps up and around the sloping courtyard within the U. These level changes resolve the slope's potential awkwardness. They also differentiate ground-floor spaces, placing the kitchen and dining at the lowest level, the living room above it, and the master bedroom on the highest and most private plane. A stairway leads up to a sleeping loft in the rafters and down to two guest bedrooms below. The site's steep incline allows the guest areas to open onto an outdoor terrace. Against the split levels, the top of the stone wall remains consistent around the perimeter of the house.

"The masonry forms an elemental bearing wall with no historical references," says Cloepfil. The flat stone, known locally as sandalwood, is relatively soft, easy to work, and consistent in color when cut. Seven inches of it were laid on either sides of an insulated block wall filled with concrete, forming a 24-inch-wide wall. The wall is so substantial that it comprises 400

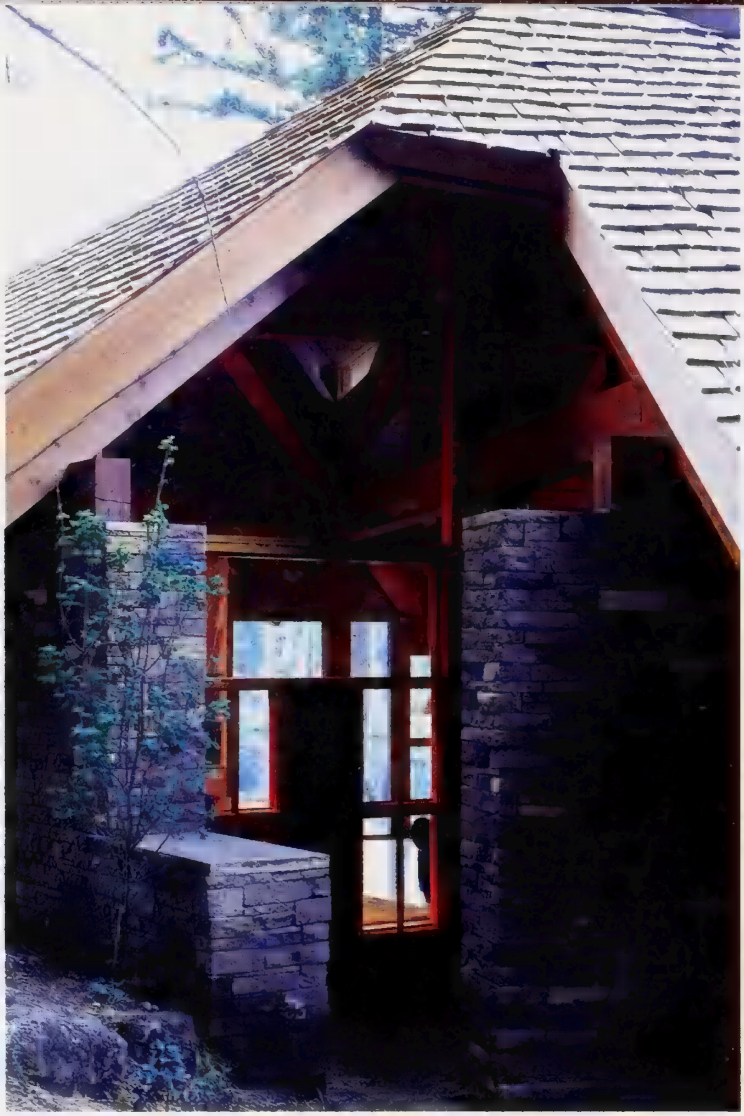
Sheri Olson, AIA, is RECORD's Seattle-based contributor and the author of a new book on Miller/Hull (Princeton Architectural Press, 2001).

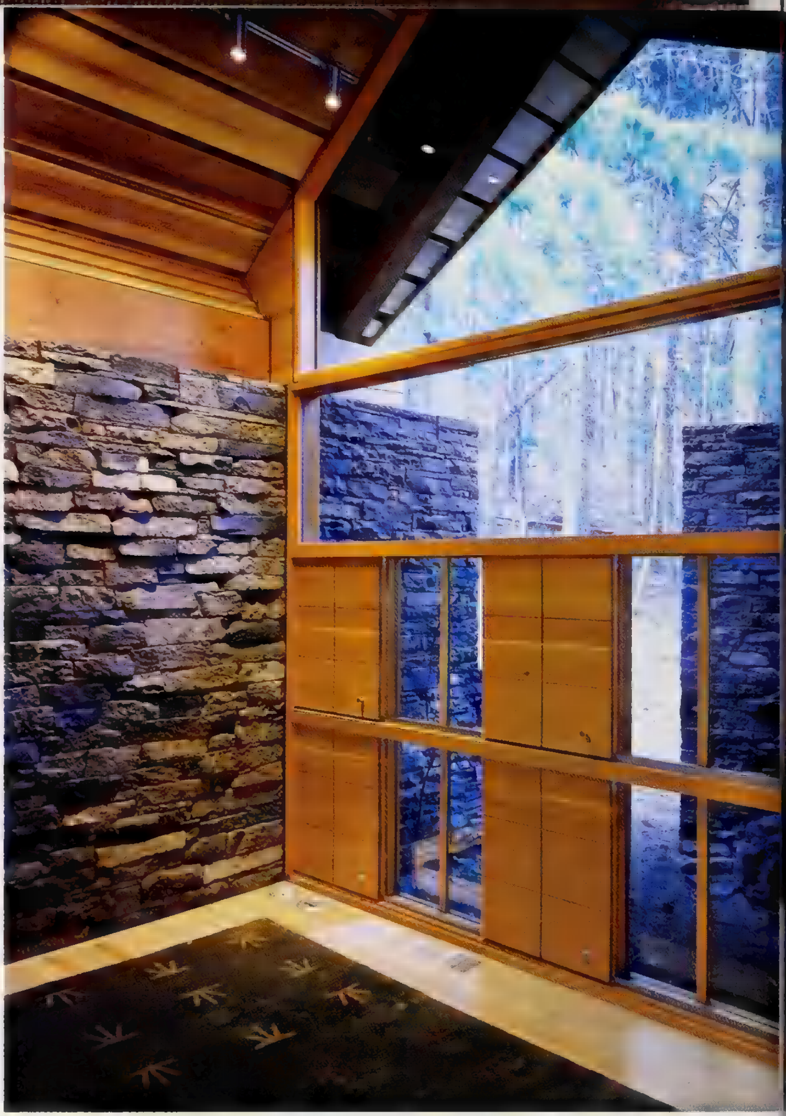




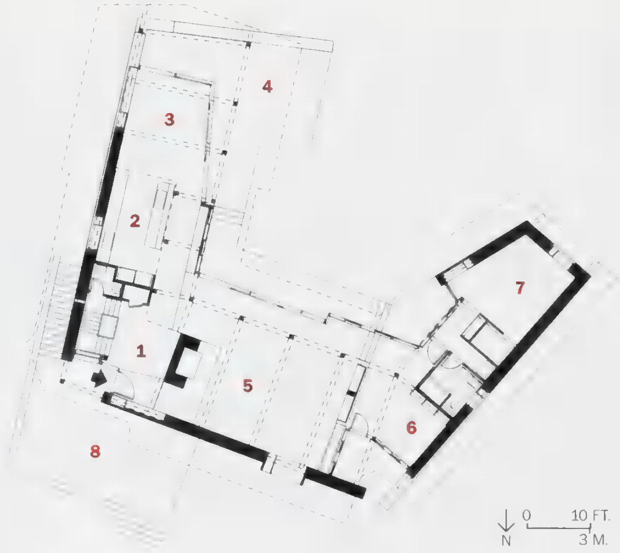
Project: *Blue Lake House*
Location: *Jefferson County, Ore.*
Owner: *Bonnie and Dan Wieden*
Architect: *Allied Works Architecture—Brad Cloepfil, AIA, principal; Doug Skidmore, Chris Bixby, Jeff Woodward, Nathan Roelofs, project team*

Engineers: *Ang Engineering Group*
Consultants: *Michael Schultz Landscape Design (landscape), Horton-Lees-Brogden Lighting Design (lighting)*
General contractor: *Chuck Newport Construction Management Services*





The entry lies within a break in the stone wall in an outside corner of the U-shaped house (above).



MAIN FLOOR

1. *Entry*
2. *Cooking*
3. *Dining*
4. *Overlook*
5. *Gathering*
6. *Study*
7. *Sleeping*
8. *Terrace*

square feet of the 4,400-square-foot footprint, in what Cloepfil calls a "large spatial gesture relative to the size of the landscape." Plumbing and electrical conduits within the wall had to be accurately located early in the construction process. "It gave new meaning to the phrase *etched in stone*," says general contractor Chuck Newport.

The stone wall and roof play against one another. "The roof hovers over the edge of the crater in counterpoint to the substantial stone walls," says Dan Wieden. The roof's cedar-shake plane folds and fractures as it rises and breaks into openings, bringing light deep into unexpected places and introducing an element of instability to an otherwise monolithic vernacular form. Underneath, its wooden framework acts more like a truss than a traditional post-and-beam structure in which loads are easily traced from roof to ground. Here, the three-dimensional form shifts loads along a complex system of transfer beams and posts, creating an intricately woven web floating over the plan.

Juxtaposed with the massive stone walls and heavy timber roof are large glazed areas. The glass wall along the courtyard dematerializes as it weaves in and out of the post-and-beam structure, putting primary visual emphasis on the deep cantilevered eaves. "The structural framing was more like finish carpentry due to the tolerances required when it's infilled with glass," says Newport. Some intersections are so complex that the only way to figure out the glazing was on-site. In the dining area at the end of the eastern leg, two 10-foot-tall wood-and-glass doors roll back from

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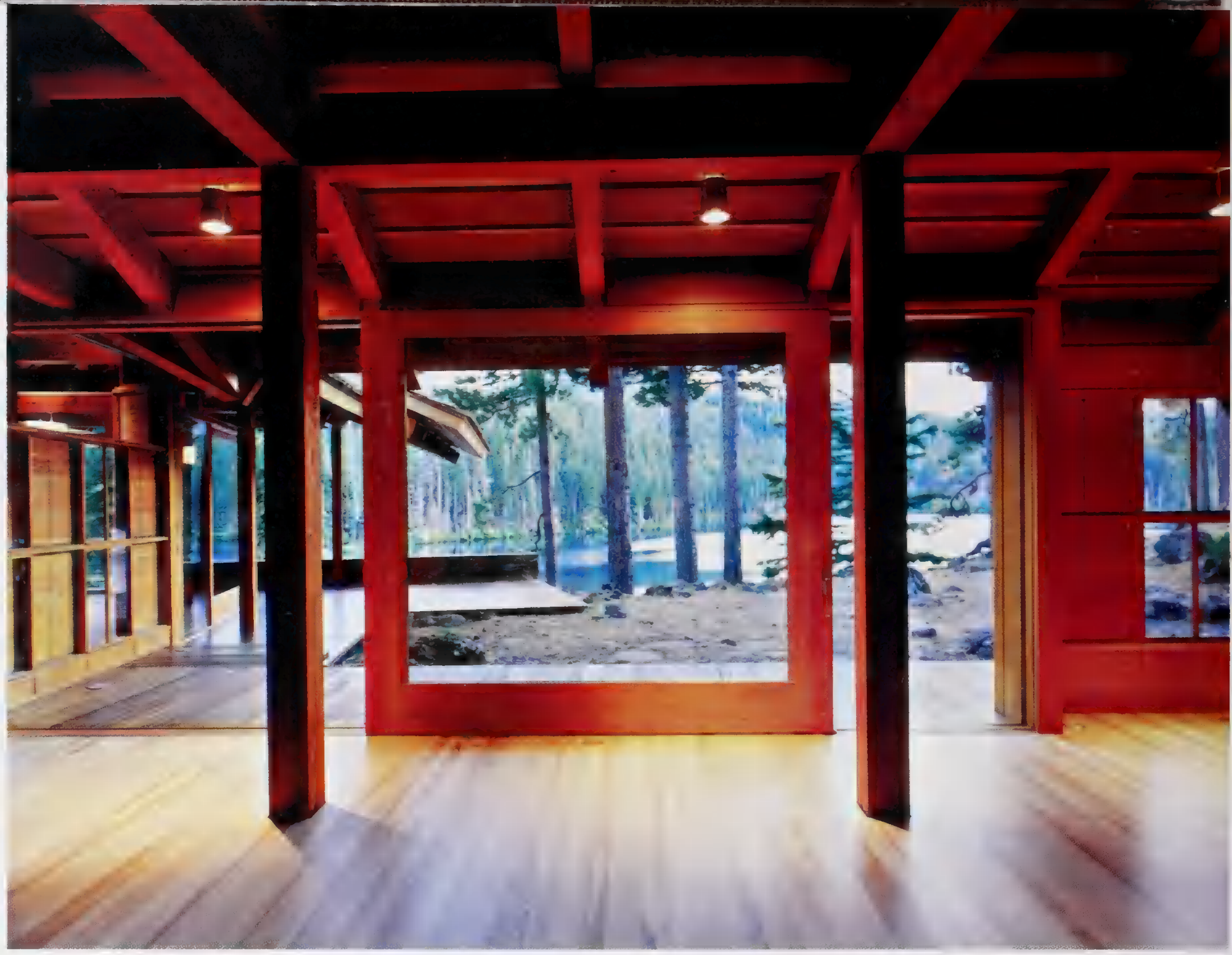

Along the south side, a huge glass wall opens to the lake (above). The deep window ledges show the thickness of the stone walls (below).

the corner merging indoors with the great outdoors. Another glass door opens the south wall of the living area to the lake. Carefully designed handles activate rollers that lift and slide the heavy doors, then set them down and seal them to close. Wood flooring continues from inside to out (changing from beech to mahogany for durability), further dematerializing exterior/interior boundaries.

Now a client of Allied Works for two contrasting projects, Dan Wieden contemplates the comparison between architecture and advertising. "Advertising is fleeting, but with the house the issue was more philosophical," he says. "We asked: What can we do that will endure 50 to 100 years from now?" The architect's response is a house that gives new voice to the vernacular by infusing it with the spatial language of Modernism. ■

Sources

Timber frame: *Earthwood Custom Recycled Timber Framing*

Masonry: *Kevin Spencer Masonry*

Wood doors: *Kolbe and Kolbe*

Locksets: *Ecostile, Baldwin, G-U Hardware*

Hinges: *Stanley*

Paints and stains: *Sikkens, Sherwin Williams, and Donald Kauffman Color*

Bathroom tile: *Bisazza*

Downlights: *Litelab Jewel Series, Hesse*

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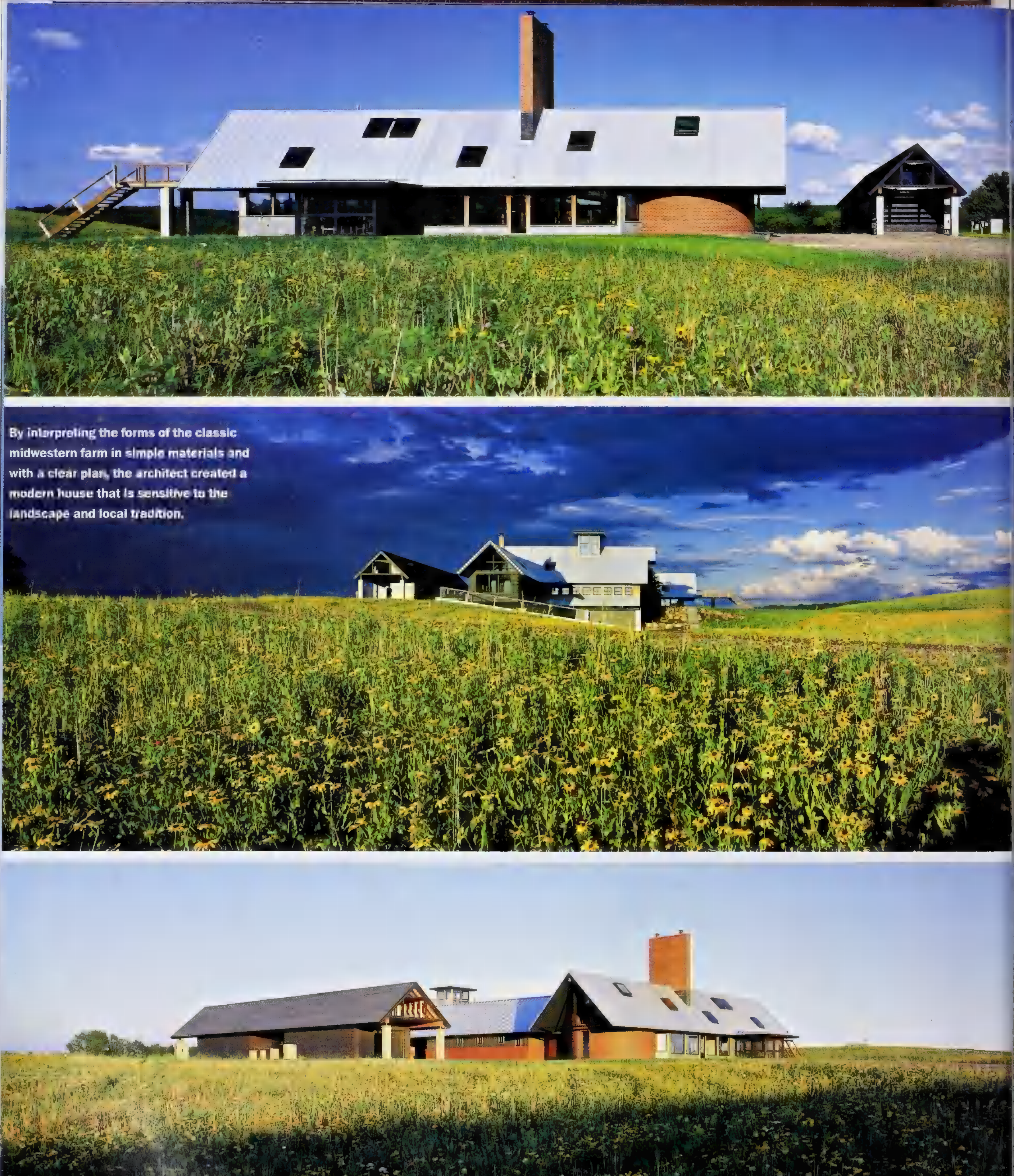


By interpreting the forms of the classic midwestern farm in simple materials and with a clear plan, the architect created a modern house that is sensitive to the landscape and local tradition.

At the Jones Farmstead, David **Salmela** modernizes the midwestern farmhouse

By Linda Hallam

When a successful urban couple began to plan their retirement, they envisioned fulfilling a long-held dream: to transform rural farmland into the Minnesota grasslands native to the region. Their goal was to create a comfortable residential compound surrounded by restored grasslands that they would deed to a trust for maintaining native grass.

Other requirements were livability and access for the wife, who is somewhat restricted in her mobility. "They wanted the house to accommodate their lifestyle and they wanted views," says architect David Salmela, of Duluth, Minn. "They didn't have specific styles or materials in mind."

After visiting the site in southern Minnesota, Salmela, who is a proponent of interpreting modern architecture for rural settings rather than replicating idealized images of the past, found inspiration in the land. Because of the gently rolling hills and views to neighboring farms, Salmela chose to site a glass-walled house with 360-degrees views and a straightforward 22-by-80 footprint. "I used modern forms for the house," he says, noting there is nothing superfluous in the materials or the arrangement of open spaces to capture maximum views and natural light.

The result is a compound—comprising a house, an office/barn, and a freestanding garage—that respects the landscape and the rural ethos while meeting the clients' need for space and accessibility. "The design explores what a contemporary rural building should be," explains Salmela. "Building suburban houses in the country is a mistake."

According to the architect, not only do uninspired, cookie-cutter houses mar the landscape, their inward orientation fails to take advantage of the rural luxuries of open space, privacy, and views. Although the clients stressed function and space requirements, rather than style and material, they chose the architect for his sensitivity to the local farming community. "From our first discussions, they wanted the house to enhance the countryside and not be offensive to their neighbors or the landscape," says Salmela.

The clients set aside 130 of the 137-acre farm for grassland restoration, which left just seven acres on which the architect could build. Salmela selected a site that offered unencumbered views of neighboring farms. The program called for roughly 7,000 square feet of living space; by breaking the project into a series of buildings, Salmela created a house that appears modest and unassuming, with a simplicity that suits the rural landscape and its built environment.

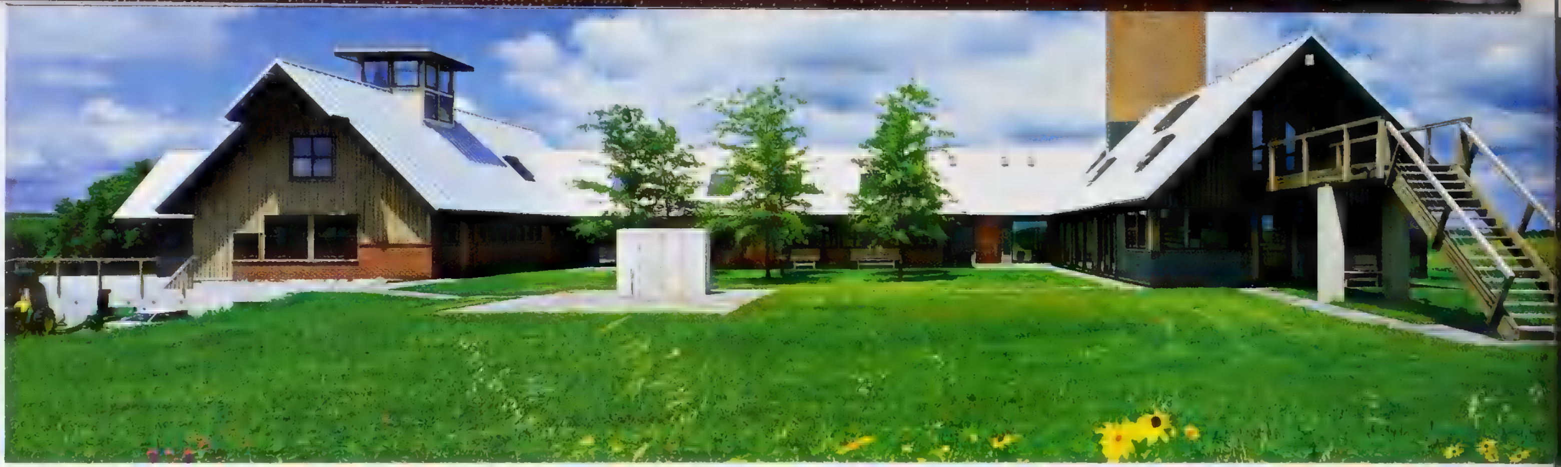
The physical and spiritual anchor of this compound is the main house, where Salmela has juxtaposed glass walls and 360-degree views with regional building materials. With a poured-concrete basement, the house has a conventional wood frame with a brick, recycled-cypress, and slate-veneer exterior and a standing-seam metal roof. By orienting the house and its courtyard to the south, Salmela ensured abundant natural light, as the clients had requested. They also desired a design that engaged the outdoors. In response, Salmela created a courtyard that offers a protected natural space with a bluestone perimeter, grass, and trees along the southern side. A screened porch to the west provides a protected sitting area that is warmed by the afternoon sun. A covered walkway connects to the barn/office/guest house, which is a simple structure that recalls the barns dotting the Minnesota farmland. The garage to the north completes the compound. Identical roof pitches unify the three structures.

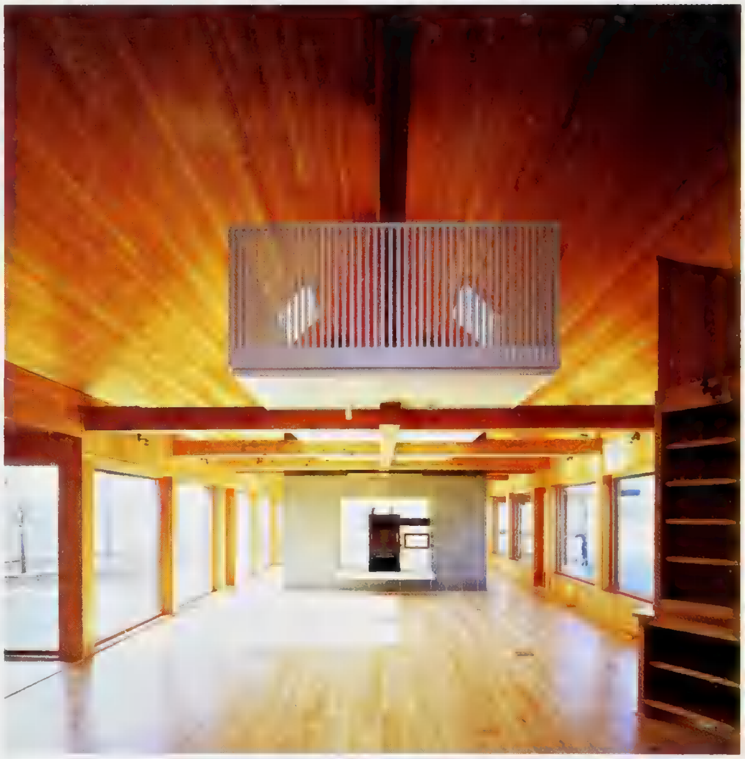
A loft runs the full length of the house and half the width, making the open spaces feel more intimate (above).

Inside the house, all the living functions are, by necessity, on one level. A soaring 18-foot cathedral ceiling makes the house feel open and

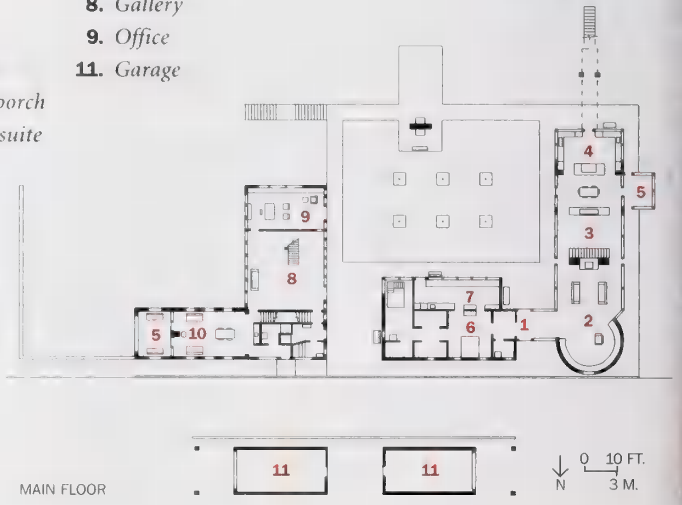
Linda Hallam is an author and editor of Shelter Books for Meredith Publishing in Des Moines.

Project: *The Jones Farmstead*
Location: *Nerstrand, Minn.*
Gross area: *6,700 square feet*
Architect: *Salmela Architect—David Salmela, AIA, principal, Souliyahn Keobounpheng, design team*
Engineers: *Carroll & Franch (structural)*
Consultant: *Coen+Stumpf & Associates (landscape)*
General contractor: *River City Builders*





1. *Entry*
2. *Living*
3. *Dining*
4. *Kitchen*
5. *Screen porch*
6. *Master suite*
7. *Work room*
8. *Gallery*
9. *Office*
11. *Garage*



Wide open spaces and a simple floor plan characterize the interior of the house. Glass walls introduce abundant natural light to the living areas (left).

modern but is mediated by 8-by-80-foot sleeping loft, designed to be used by visiting children and grandchildren. Running the full length of the house and just less than half the width, this loft lowers the ceiling to provide a feeling of enclosure at the hearth, which is warmed by a wood-burning stove, and in the breakfast area. Painted glossy white, the loft adds to the feeling of lightness and openness that pervades.

The house is simultaneously modern and rooted in a long tradition. In many of his projects, Salmela creates a new vocabulary for rural architecture, using the local materials and forms—such as the pitched roof and hearth—that have worked for centuries. Still, he creates contemporary, livable spaces that are undeniably modern. The house was immediately comfortable for the clients, and Salmela says he and his clients were gratified by the positive responses from neighbors, who are lifelong residents of the farming community. "Sometimes city people move in and build without understanding the area," the architect says. "In this case, I think we did the right thing." ■

Sources
Hardware: *Schlage*
Hinges: *Schlage*
Pulls: *Hafele*
Cabinet Hardware: *Hafele*
Interior ambient lighting: *Modular*
Downlights: *Halo*
Paints: *Pratt & Lambert*
Task lighting: *Prisma*
Exterior lighting: *Stonco*

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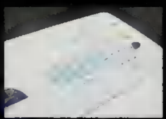

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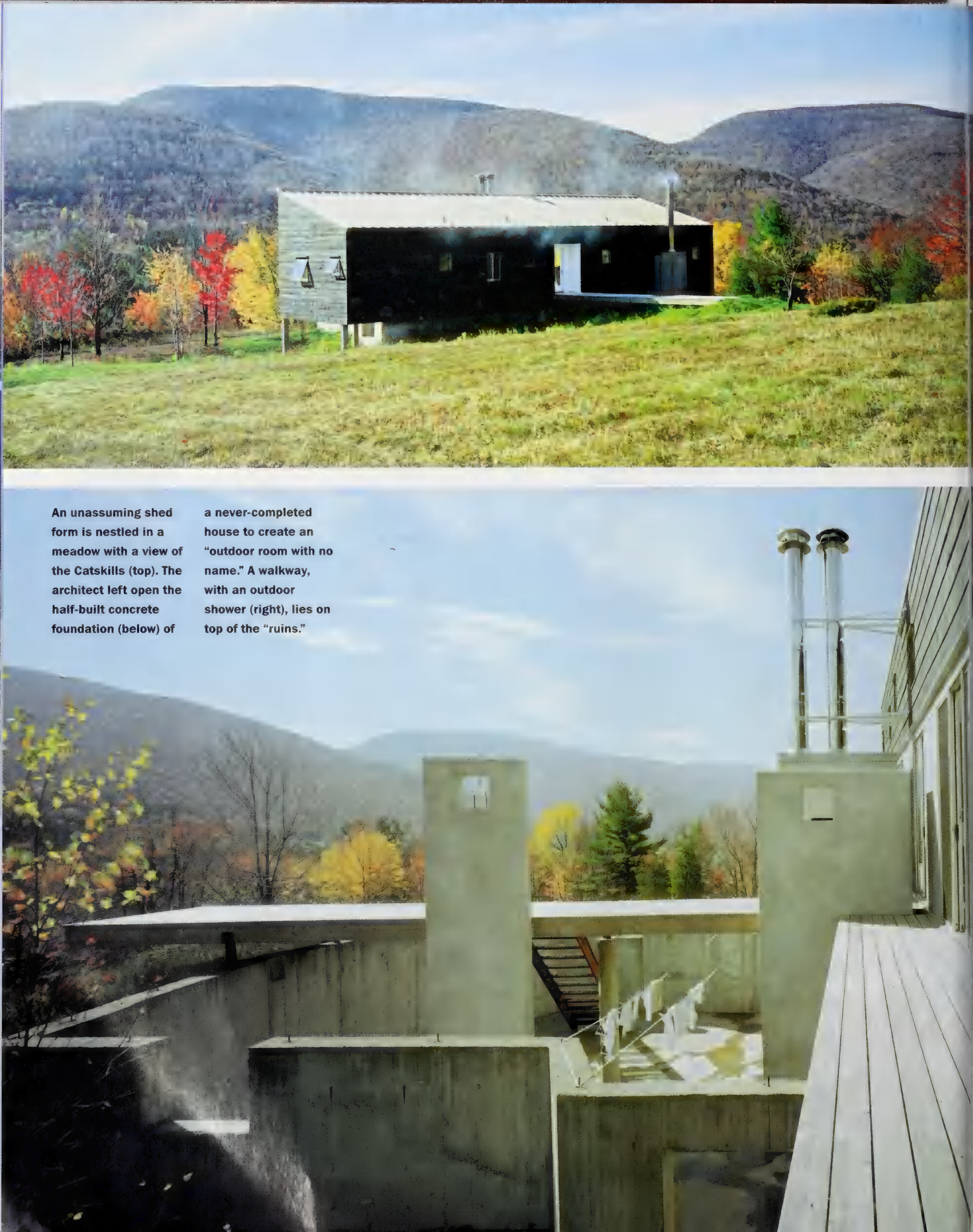


An unassuming shed form is nestled in a meadow with a view of the Catskills (top). The architect left open the half-built concrete foundation (below) of a never-completed house to create an "outdoor room with no name." A walkway, with an outdoor shower (right), lies on top of the "ruins."

With the Nickerson-Wakefield House, Anderson **Architects** updates the country shack

By Raul A. Barreneche

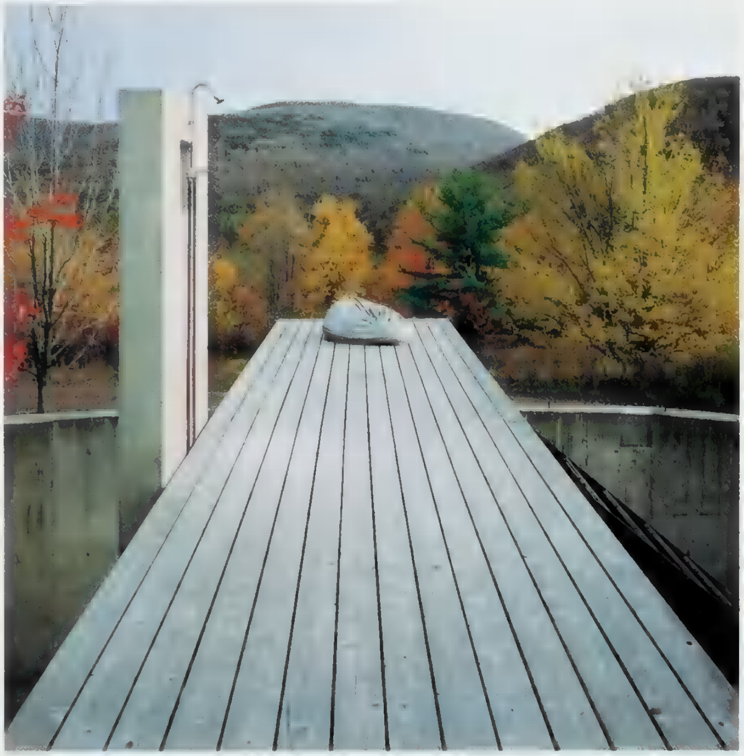
To the outside observer, the brief presented to architect Ross Anderson might sound like an invitation to build an indulgent, romantic fantasy. Two ex-pat Brits, *Vogue* fashion editor Camilla Nickerson and her husband, art critic and curator Neville Wakefield, asked the Manhattan architect to design a weekend retreat for them atop a hillside ruin on 20 picture-perfect acres in New York's Catskill Mountains. But neither Anderson nor his clients were interested in building a folly or in re-creating an English country manor; in fact, Nickerson and Wakefield had been considering no-nonsense log-house homes and inexpensive prefab structures before calling on Anderson. And the ruins they inherited with the property were not the crumbled remnants of some ancient civilization, rather the half-built concrete foundations of a three-story spec "chalet" left behind when its developer went bankrupt.

"The clients told me, 'We want to do something great, but we have zero dollars,'" recalls Anderson. "The first question was, 'Do we bulldoze the foundation and start over, or work with it?' We decided to keep the foundation and treat it like a found object and then drop an extruded house form with a shed roof on top of the existing footprint. We let the architecture develop where the two commingle," he explains. Anderson created this complex, engaging architectural expression for less than $100 per square foot.

Fortunately for the architect, the existing walls of the aborted foundation (which he left more or less intact) were well sited, nestled into a shallow hillside meadow to the north and open to the south, facing the ideal views of the Catskills. As if to remove any doubt of kinship with the original foundations—and to maximize mountain views and solar gain—Anderson placed the new single-story shed perpendicular to the "ruins." The 16-by-75-foot wood-framed volume extends beyond the existing walls to create a sheltered carport to the west and a covered entry to a workshop and studio to the east, beneath the overhangs. The original walls bear most of the weight of the addition above, while concrete pilotis beneath the overhanging ends pick up the remainder of the load. An unusual space results from the architect's decision to leave open to the sky the area of the foundation not covered by the new addition, thus creating a vaguely urban, concrete-paved courtyard or outdoor "room with no name," as Anderson calls it.

The architect inserted a 6½-foot-wide wood-plank walkway, reminiscent of a beachfront boardwalk, to reach the new shed from the hillside meadow to the north. The 70-foot-long walkway skewers the addition at an odd angle, passing through its heart and jutting out beyond it; at that point, the walkway becomes a narrow deck with an outdoor shower and alfresco fireplace. "We wanted to encourage people to be outside," says Anderson. "The outdoor fireplace is a great place to sit bundled up."

Raul A. Barreneche, a contributing editor to Metropolitan Home *and* Travel + Leisure, *writes for* House Beautiful *and* The New York Times. *He is also coauthor of the forthcoming* House: American Houses for the Next Century *(Rizzoli Universe).*



As it slices through, the walkway both organizes circulation through the house and cleaves it into two distinct realms. Steel staircases up from the carport and down from an attic-like guest loft are hung from the walkway, which defines a public zone to the west with a double-height living-dining room and kitchen, and a private bedroom wing to the east. With the exception of the smaller of the two bedrooms, all of the spaces overlook the most scenic views to the south through large expanses of sliding glass doors that "use the landscape as wallpaper," to Anderson's mind. The architect specified 10-foot-tall aluminum-framed doors that are typically found in hurricane-prone settings such as Hawaii and are engineered to withstand high winds and driving rains. The north facade is much more solid, with small, rectangular windows punched into its surface.

Both inside and out, the home is finished in stern, inexpensive

---

Project: *Nickerson-Wakefield House*
Location: *Westkill, N.Y.*
Architect: *Anderson Architects—Ross Anderson, president; MJ Sagan, vice president; Paul Henderson, project manager; Todd Stodolski, Andrew Benner, Peony Quan, Caroline Otto, Shane Braddock, Josh Bergman, project team*
General contractor: *John Berger*

Sources
Metal roof: *Astrazinc*
Windows: *Pozzi*
Sliding doors: *Fleetwood*
Interior paint: *Benjamin Moore*
Exterior stain: *Cabot Stain*
Ambient lighting: *Halo, Stonco*
Downlights: *Killark*
Task lighting: *Alkco*
Exterior lighting: *RAB, Stonco*

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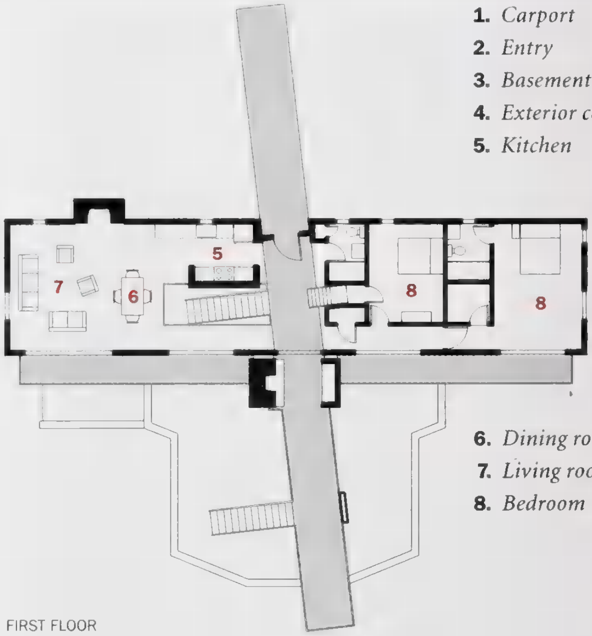
For the house to come in at under $100 per square foot, only the most inexpensive materials—drywall, plywood, and off-the-shelf pendant lights—were used (above).

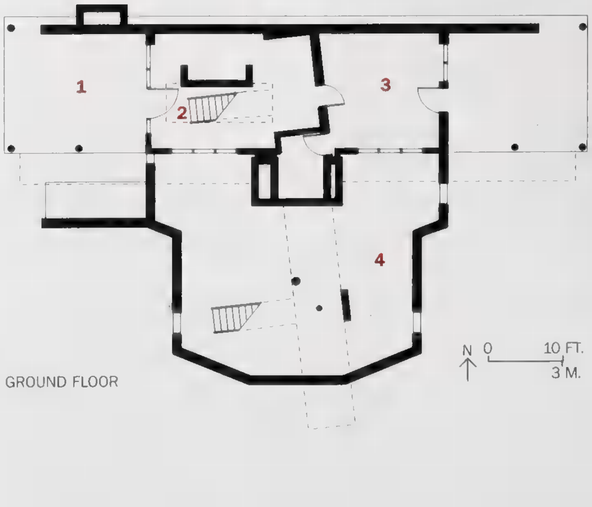
materials. "We wanted to use the cheapest stuff in the best way," explains Anderson, "so we could spend money on necessities, such as the sliding glass doors, since the site is so exposed to wind and weather." Nothing fussy was used for the interior: drywall, plywood ceilings and floors with radiant heating beneath, and inexpensive, off-the-shelf industrial pendant lights. The exterior palette is equally simple: standing-seam metal roofing and five-inch-wide pine plank siding stained nearly black with a custom mix of creosote and paint. This unexpected color choice has an almost unsettling quality in the verdant landscape, but Anderson enjoys its subtle changes in sunlight and its undeniable ability to set the house apart from its site. "Keeping it monochromatic is like signing a noncompete agreement with the landscape. And it looks great in the snow," he adds.

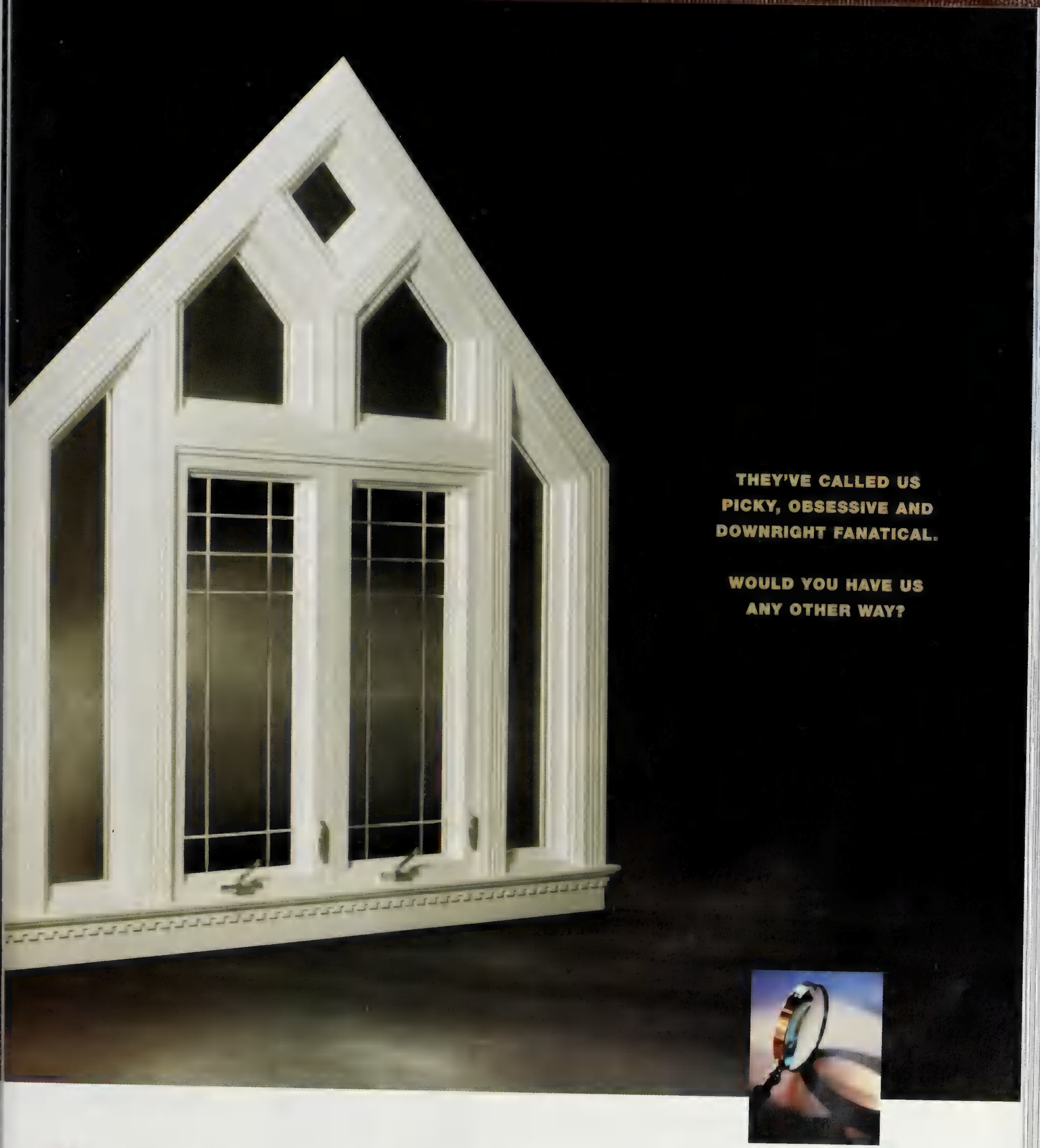
While the house's references to industrial sheds and barns are clear, it also reveals decidedly urban characteristics, such as the concrete courtyard—where the owners have been known to hang their laundry out to dry—and exterior metal stairs that remind Anderson of fire escapes. Although its spare, industrial materials recall the pared-down, edgy quality of a downtown loft, the house doesn't ignore the rural surroundings in its dialogue. Anderson's solution proves that clients can look beyond log cabins and prefab boxes to create affordable and provocative architecture in the country. ■

1. *Carport*
2. *Entry*
3. *Basement*
4. *Exterior court*
5. *Kitchen*



6. *Dining room*
7. *Living room*
8. *Bedroom*





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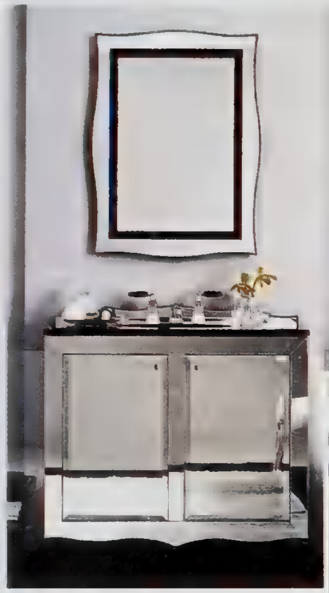
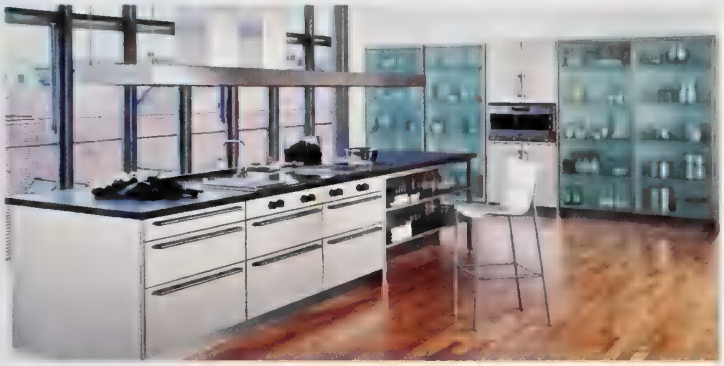
Kitchen/Bath Industry Show

In April, kitchen and bath designers headed to sunny Orlando for the annual Kitchen/Bath Industry Show. Here is a review of the newest trends, from bathroom faucets to outdoor grills *Rita F. Catinella*



◄ Powder room

Inspired by the opulent mirrored furniture of the 1940s, Glamour is the newest collection of bathroom fixtures designed by Barbara Barry for Kallista. Glamour's mirror, vanity, bathtub, medicine cabinet, and wastebasket are crafted in mirror and black granite. Ebony or Ivory faucet-handle inserts (below) create a warmer or cooler design motif. 888/4-KALLISTA. Kallista, Kohler, Wis. **CIRCLE 200**

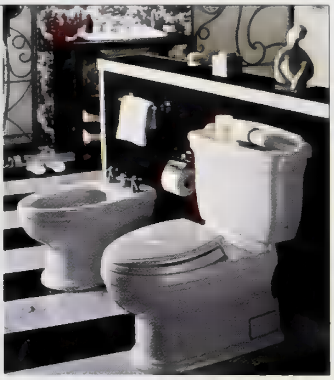


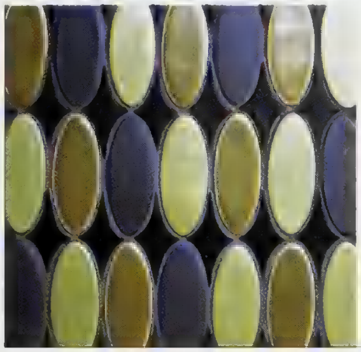
▲ Appetite for aluminum

The +ALU2000 kitchen from Poggenpohl is dedicated to aluminum—the drawers, handles, internal fittings, and accessories of the sleek system are all made of the material. In addition, the system features a stainless-steel work surface and frosted glass door fronts. A special anodized coating finishes the surfaces for a silvery matte shine. 973/812-8900. Poggenpohl, U.S., Inc., Wayne, N.J. **CIRCLE 203**

► Classical suite

The Carrollton suite includes a skirted toilet with TOTO's G-Max flush system, a bidet, and both a self-rimming and pedestal-style lavatory. A classical, molding-like treatment can be found at the base of the toilet, bidet, and pedestal lav. A high-lip back on the toilet tank and sinks creates a practical, shelflike space. 770/282-8686. TOTO, Morrow, Ga. **CIRCLE 204**



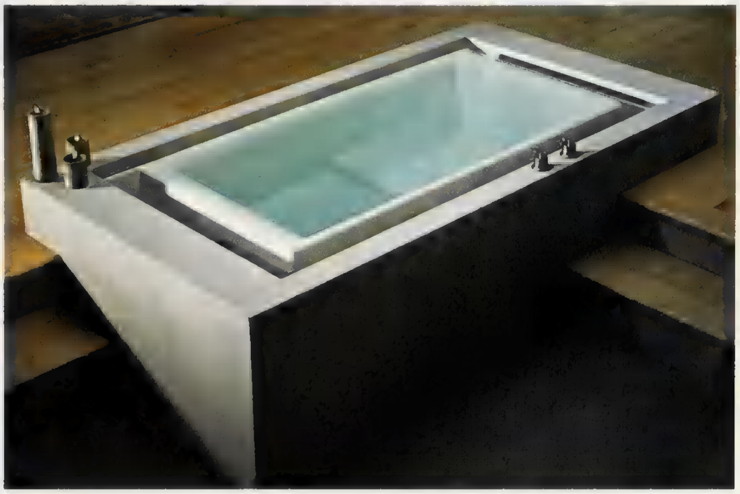


◄ Hipster style

Gotham by Adriana Baler adds a modern-retro porcelain tile to the current Ann Sacks offering. Gotham is handmade and available in three styles—Ovals, Round Rectangles, and Drops. The tile's current retail price is approximately $80–$90 a square foot. 800/278-8453. Ann Sacks, Portland, Ore. **CIRCLE 201**

► Kitchen duty

The third-generation DishDrawer dishwashing system incorporates Fisher & Paykel's patented SmartDrive technology. The company claims the system is the only dishwasher able to run two cycles at one time, and the only one that varies the water pressure within each wash cycle. Eight different wash options allow users to customize their dishwashing. The system requires as little as 2.4 gallons of water per load. 888/936-7872. Fisher&Paykel Appliances, Irvine, Calif. **CIRCLE 202**



▲ Endless horizon

The Sok overflowing bath lets bathers float in 24½-inch-deep water as air-jets generate tiny, effervescent bubbles that cling to the body and lightly caress the skin. Submerged from shoulders to toes in the 75-inch-long tub, the bather is at eye level with a sleek plane of water that continuously spills over the tub's rim into a water channel and is recirculated back into the tub, conserving water. The tub uses a 1.5 KW heater and a ½ HP, 230-volt pump. 800/4-KOHLER. Kohler Co., Kohler, Wis. **CIRCLE 205**

Residential Products

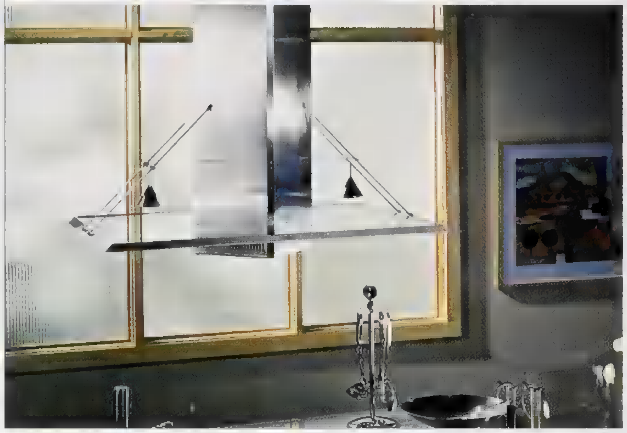
Kitchen/Bath Industry Show

▲ Shower power

The Ondine electronic shower system delivers a preprogrammed shower experience at the press of a button. The shower's water temperature and different pulsating or steady shower sprays will follow whatever program has been entered. The Adlon luxury showerhead is available with a 2½-gallon-per-minute automatic flow controller. For commercial installations, Adlon offers the option of a theft-resistant installation fitting. 800/423-9485. Interbath, City of Industry, Calif. **CIRCLE 206**

► Haute hoods

The Best K73 range (right) incorporates a gently curving, hand-formed glass canopy floating under a stainless-steel chimney flue. Multilevel halogen lighting ranges from bright cook-top illumination to low nighttime settings. The Best IS502 range (below), available in 2002, features glass and stainless-steel intermingling under a dramatic lighting system. A high-efficiency exhaust system provides 480 CFM of power that can be operated from a multispeed electronic push-button control or by a wireless, full-function remote control. 800/558-1711. Broan-NuTone LLC, Hartford, Wis. **CIRCLE 207**



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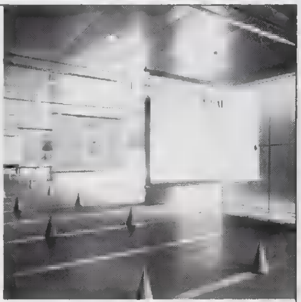

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M•Pact is a new valve system that allows users to upgrade the style of the entire bath without going under the sink or behind the shower wall. Each trim piece in the system fits on a common valve underbody. Once installed, the trim can be upgraded or changed at any point in the remodeling or construction process without replacing any plumbing. 800/BUY-MOEN. Moen, Inc. North Olmsted, Ohio. **CIRCLE 208**

▼ Brighter barbecue

Dacor's new outdoor grill, coming out in late summer 2001, is available in 36- and 48-inch sizes. The grill has sealed brass side burners, automatic electronic ignition, infrared rotisserie burner, a large grilling area, and the most convenient advancement yet—a halogen light built right into the grill. 800/793-0093. Dacor, Pasadena, Calif. **CIRCLE 209**

◄ What dirty dishes?

The Asko Mirage Series is specially designed to accept custom panels that match cabinets precisely without a trim kit or hardware. Custom panels attach to the dishwasher door with four screws that are invisible when the door is closed. To complete the illusion, the control panel is on top of the door so they disappear under the countertop. 800/367-2444. Asko USA, Richardson, Tex. **CIRCLE 210**

► Planning concept

Organomics is a new concept in cabinetry focused on creating spaces designed around the way people actually use them. Combining the art of organization and the science of ergonomics, the concept helps users review on what activities take place and prioritize items for storage. To make kitchens work smarter "organomically," homeowners should think in terms of zones designed for certain tasks. The cabinets shown above are Amera Forrister Cherry in Cider. 800/575-8763. Merillat Industries, Adrian, Mich. **CIRCLE 211**

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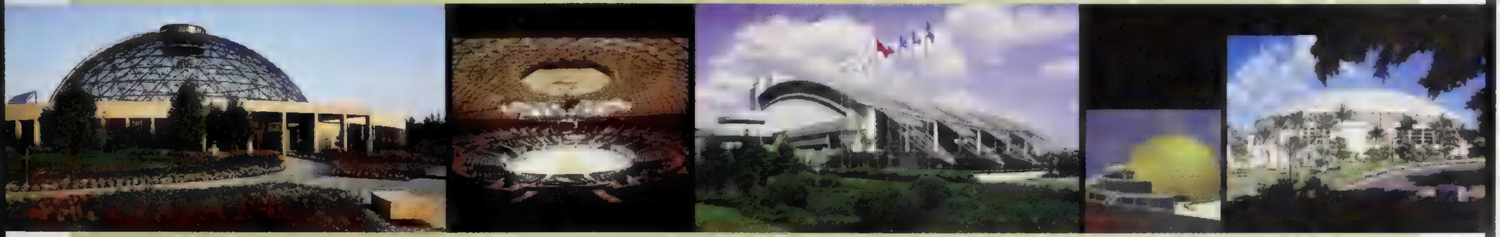

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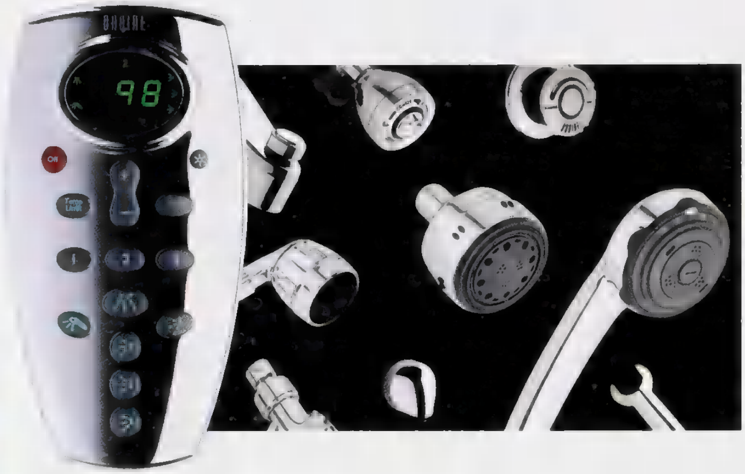

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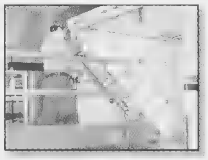

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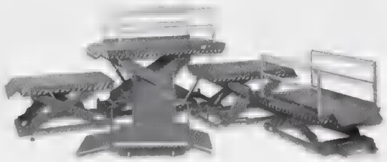

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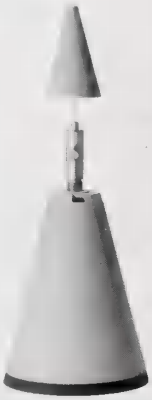

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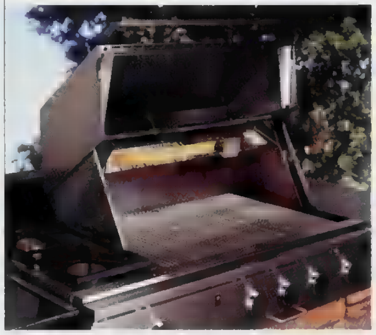

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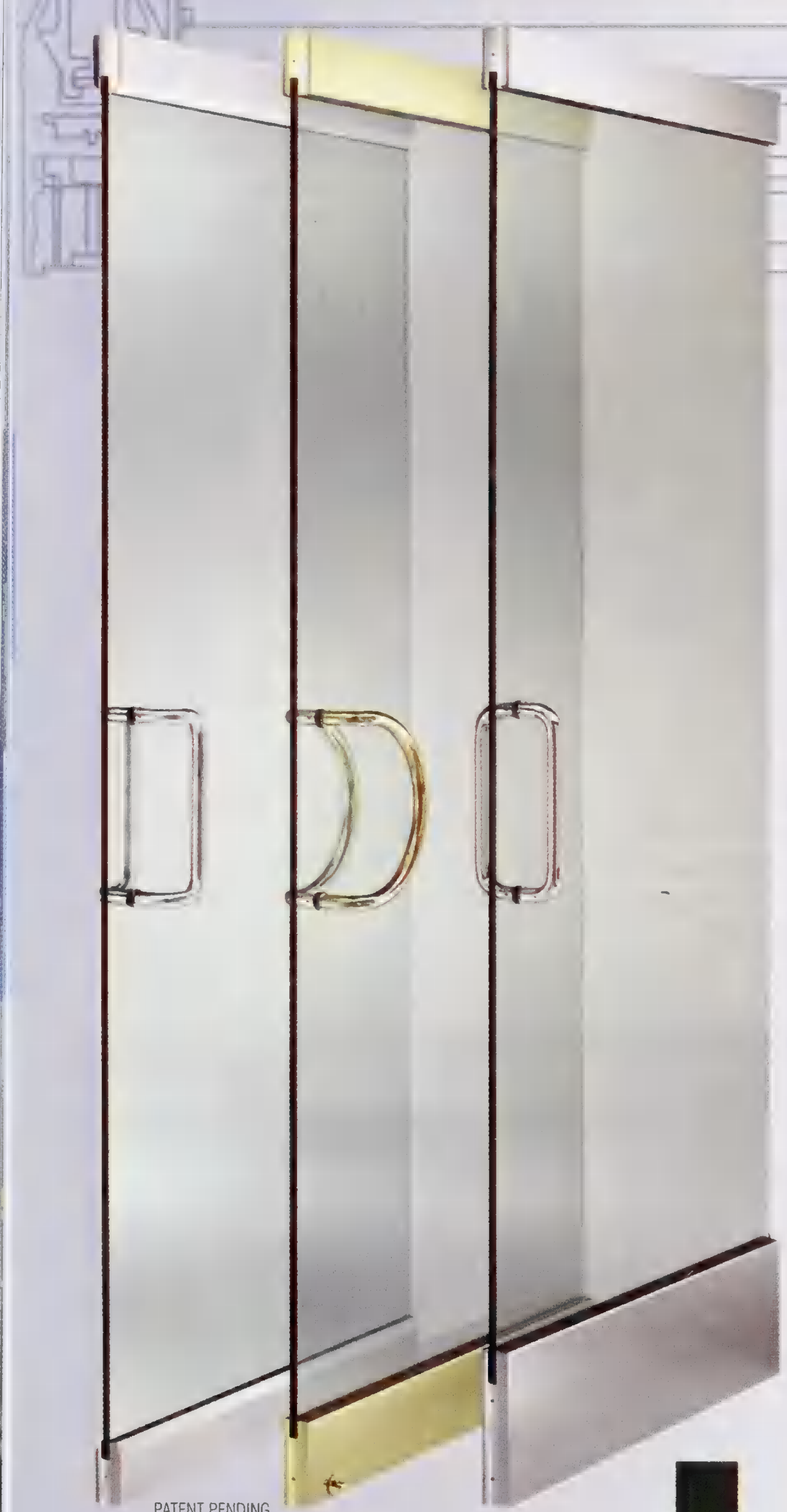
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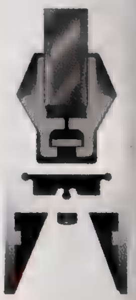
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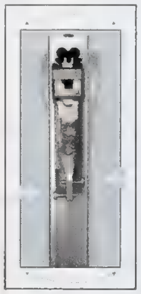
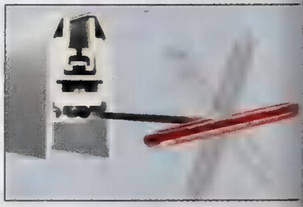

The unique, pre-installed Adjustable Slide-Block is at the heart of this easy adjustment system. This standard feature on both bottom and top rails allows for door alignment without removing the doo



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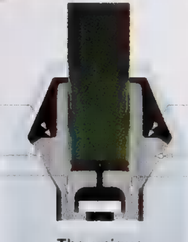
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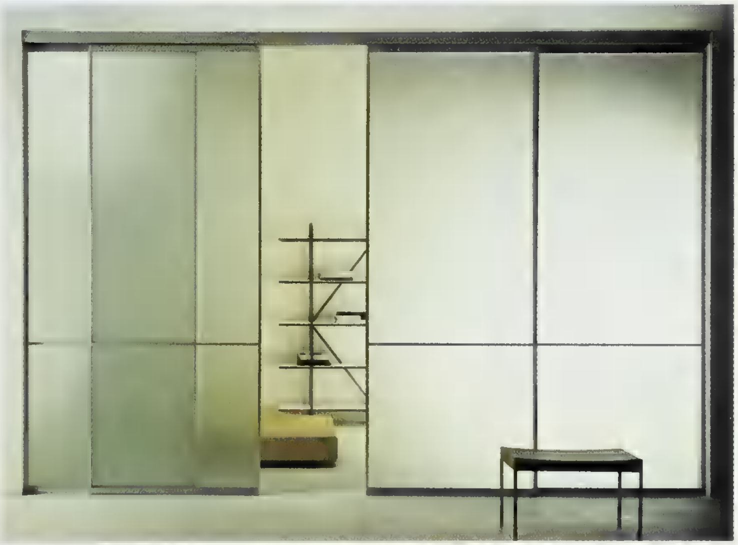
New Products

Cast bronze, tempered glass, wood, and fiberglass are just a few of the materials used to design the residential and commercial doors shown below and on the next page. These doors use both engineering and quality materials to make the most of the exterior, interior, and even below-grade spaces they introduce. *Rita F. Catinella*

Contemporary Italian glass sliding doors

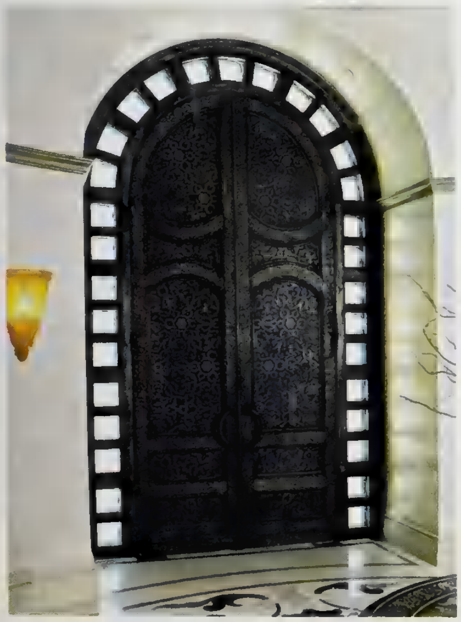
Available through a showroom in the Architects & Designers Building in New York City is Tre Più's collection of contemporary hinged and sliding door systems. The Pavilion system, designed by Antonio Citterio, is named after the glass-walled German pavilion designed by Mies van der Rohe for the Universal Exhibition in Barcelona in 1929. Pavilion is a fixed and sliding door program with a frame available in five different types of profile finishes: three in anodized aluminum and two in wood—clear walnut or cherry. Doors are available in tempered, transparent, or frosted glass, and in veneered canaletto or white chestnut oak. For safety, only hardened glasses are used in the system, and these are available in eight finishes, ranging from Matisse Green and Cézanne Light Blue to Rose Van Gogh. The system is shown here with a natural anodized aluminum crosspiece with a "Klee-colored," frosted, hardened glass on two side fixed panels and two sliding panels. A lamp can be fixed onto the sliding rail. 212/935-5955. Tre Più, New York City. CIRCLE 213



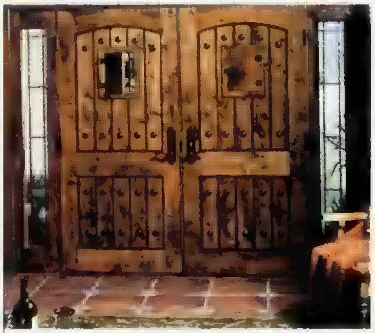
The Pavilion system separates spaces while maintaining an open feeling.

Fifteen-foot-high cast-bronze doors open with the push of a finger

Complementing a private 45,000-square-foot Saudi Arabian villa on the Red Sea are custom bronze doors that stand 15 feet by 9 feet and weigh 6,750 pounds. Daniel Charbonneau, project manager for the villa's design and construction, commissioned Deggingers' Foundry and designer/project manager Janet Zoble to create the door in cast bronze featuring a 16th-century Arabic decorative motif and sidelight of hand-cast glass. The Foundry also created nine cast-bronze window grilles, the largest of which is almost the size of the door.



Engineered to open with the push of a finger, the doors feature a tubular steel inner structure clad with cast-bronze panels and fabricated bronze plate. "The trick was to engineer the handling of the door so it didn't become wall art but a functioning doorway," says Zoble. Deggingers' worked with Rixson to come up with a combination of hinges and pivots to support a load that comes close to a ton per door leaf. The floor pivot is designed to slow down in the last 15 degrees of closure. "We went with an offset hung floor-closer with three intermediate pivots per leaf," explains Zoble. "Rixson certified that those would bear the weight of the door. The precise positioning of the three aligned pivot hinges and the weight-bearing pivot door-closer gave it the balance to open easily." Besides the door's weight, the team had other issues to contend with regarding the extreme climate in Saudi Arabia. Constructed in Kansas in frigid January, the door might expand when transported to a hot, arid area on the Red Sea. "We had information that our welds were secure enough that it would withstand a little expansion and contraction," says Zoble. "A very minor shift occurred." In addition, the high saline content in the sea air would have an impact on the patination of the brown/bronze-colored door. The client's preference was to leave the patination unsealed, allowing for the natural development of a green patina. 785/232-4788. Deggingers' Foundry, Topeka. CIRCLE 214



Grand entrances

The Estate Collection recalls a time when entrances reflected the beliefs and status of the families within. The clear or knotty alder doors can be customized by selecting the wood surface texture, finish color, decorative metal accents (including speakeasy and sidelight grilles), hardware, and glass that will complement a variety of styles. Door shapes include flat, Gothic, segmented, and radius top. The door above features distressed knotty alder with an antique chappo finish, a speakeasy with a grille and a door, and coordinating sidelights with a rustic grille on the exterior. 800/468-3667. IWP, San Diego. CIRCLE 215

New Products

◄ Crafty collection

Inspired by Craftsman architecture and Frank Lloyd Wright's signature design style, the Craftsman Collection features 27 exterior door designs in Douglas fir or western hemlock, with matching transoms and sidelights. Art-glass patterns include geometric representations of wheat stalks with azure glass detail and arrangements of squares and rectangles offset by amber glass elements. The doors are 1¾ inches thick and come standard with ¾-inch insulated glass. They can be specified in heights of six feet eight inches, seven feet, and eight feet. 800/952-4057. Simpson Door Company, McCleary, Wash. **CIRCLE 216**

◄ Douglas fir line

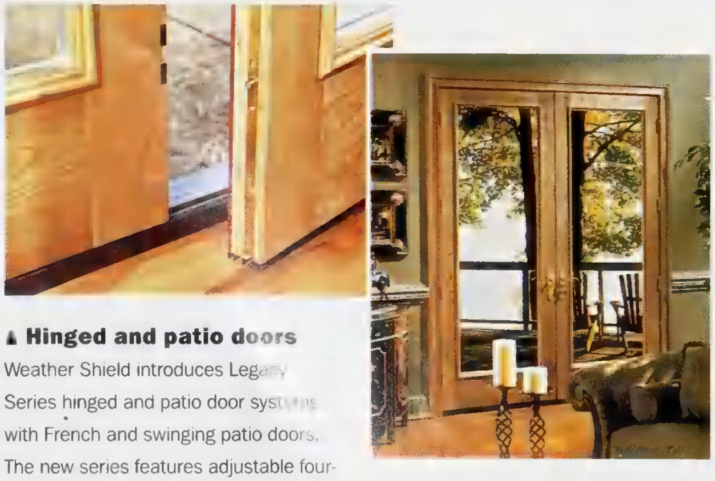
Growing in natural abundance, Douglas fir accounts for one-fifth of North America's softwood reserve. Nord offers its Douglas fir line in two panel-construction options: traditional edge-glued solid wood with double-hip raised detail for shadow lines; or exterior-grade MDF covered with a book-matched, real wood veneer. Sizes up to seven and eight feet are available. 800/877-9482. Nord, Klamath Falls, Ore. **CIRCLE 217**

► Pultruded fiberglass

Graham offers a new collection of pultruded fiberglass windows and doors suitable for seashore condominiums and hotels. The Graham Renaissance Series provides an alternative to aluminum and clad-wood windows in corrosive seacoast environments. Pultruded fiberglass expands at the same rate as glass, so all components work together as a unit. The collection includes a casement/projected style window, terrace door (shown), and sliding glass door. 800/755-6274. Graham Architectural Products, York, Pa. **CIRCLE 218**

▲ Inswing or outswing French doors

Ultimate French doors have adjustable hinges, a clear pine interior, and solid brass handles that activate a concealed multipoint locking system. Inside the operating door stiles, a structural spine made of Ultrex prevents warping. The door exteriors can be either wood or thick extruded aluminum cladding. Many configurations receive a standard DP 40 rating from the Window & Door Manufacturers Association. 888/537-8268. Marvin Windows and Doors, Warroad, Minn. **CIRCLE 221**

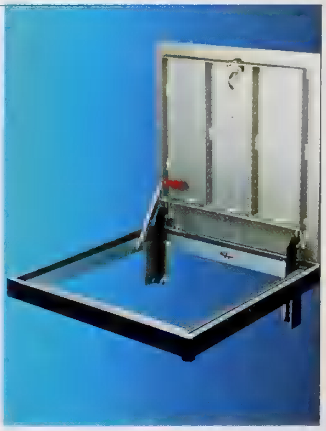


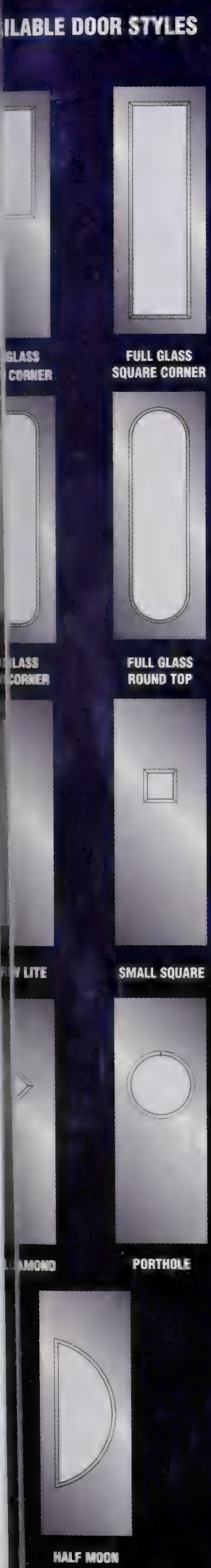
▲ Hinged and patio doors

Weather Shield introduces Legacy Series hinged and patio door systems with French and swinging patio doors. The new series features adjustable four-inch hinges that match handle set finishes and allow for precise door-height adjustment. The heavy-duty 2¼-inch-thick door panels have a solid wood core with extruded aluminum exteriors. A German engineered three-point locking system is provided on all doors. 800/477-6808. Weather Shield Mfg., Medford, Wis. **CIRCLE 220**

► Below-grade access

Bilco's J-AL access doors have been redesigned for easier installation, improved corrosion resistance, and lower maintenance. New standard features include a patented anchorage system, debris gasket, advanced-composite housings, forged aluminum hinges, and a 25-year warranty. The door provides access to areas located underground or beneath/between floors. 203/934-6363. The Bilco Company, New Haven, Conn. **CIRCLE 219**





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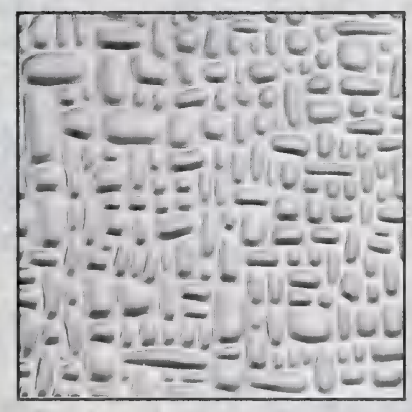
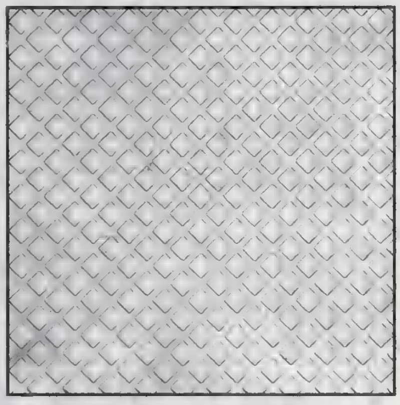
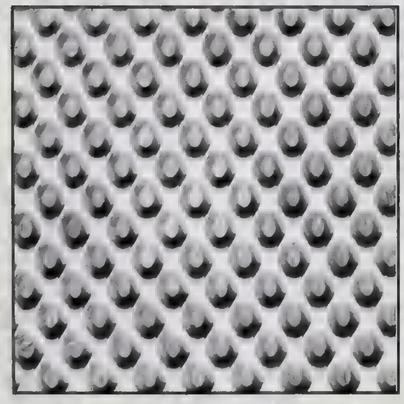
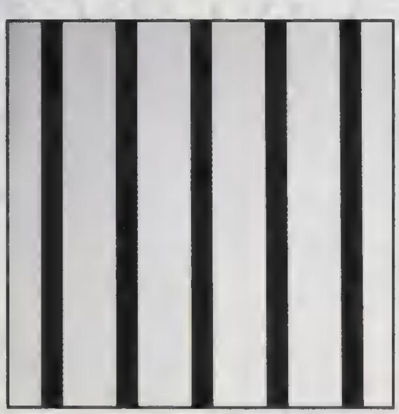
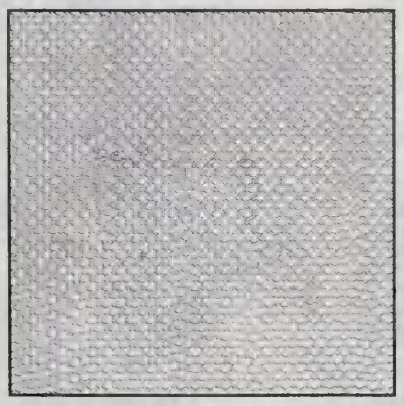
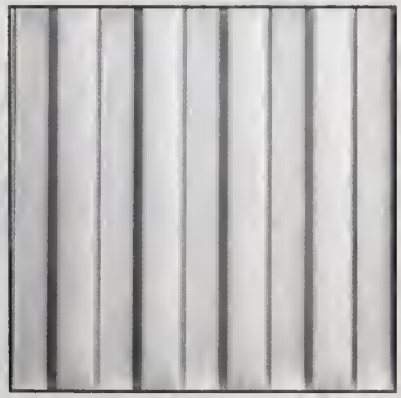

DECO


SMALL DIAMOND


LARGE OVAL


MIRROR STRIPE


LINEN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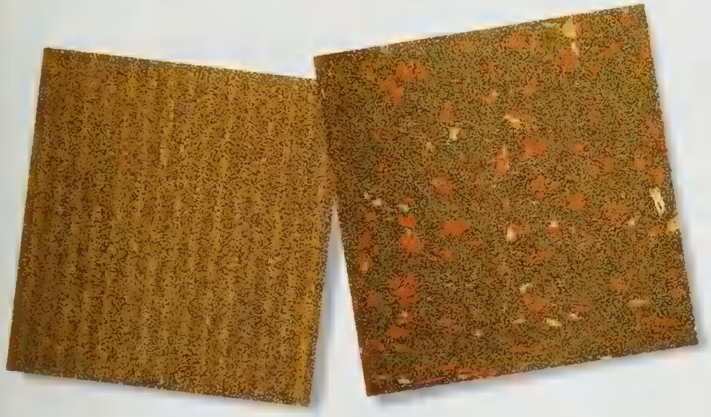
5,349,782 5,400,474 6,183,023
other patents issued or pending USA

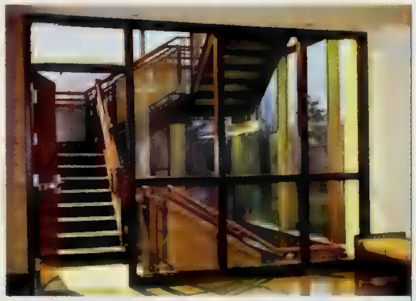
Product Briefs



▲ Quirky cork

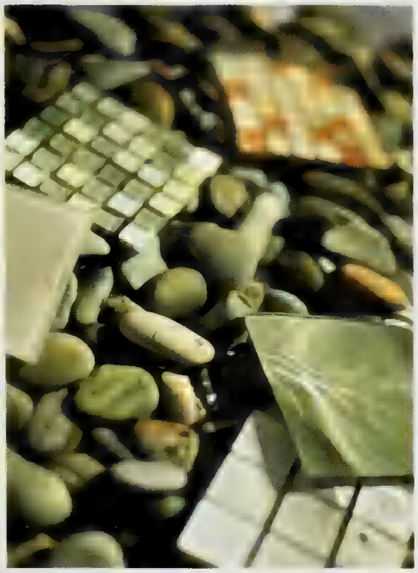
The ProntoKorQ collection consists of four designs of floor- and wallcovering tile by designer Kevin Walz. Since the cork tiles are pigmented in the natural binder, the color permeates through the layer of granulated cork and is not susceptible to scratching off. The four new designs are Striped (above left), Terrazzo (above right), Solid Color, and Chunk Style. ProntoKorQ is a three-layer product: insulating cork, non-formaldehyde MDF, and high-density granulated cork. 212/758-2593. KorQinc, New York City. **CIRCLE 222**

► Get it while it's hot



FireLite Plus is a laminated, impact safety-rated version of the wireless fire-rated glass ceramic FireLite. Listed with U.L., FireLite Plus carries fire ratings up to three hours in doors and up to 60 minutes in other applications. Unlike some fire-rated glazing materials, the product's performance will not be affected by the spray from sprinklers or extinguishers. FireLite Plus fits in standard fire-rated frames or TGP's narrow profile FireFrames by Forster. 888/397-FIRE. Technical Glass Products, Kirkland, Wash. **CIRCLE 224**

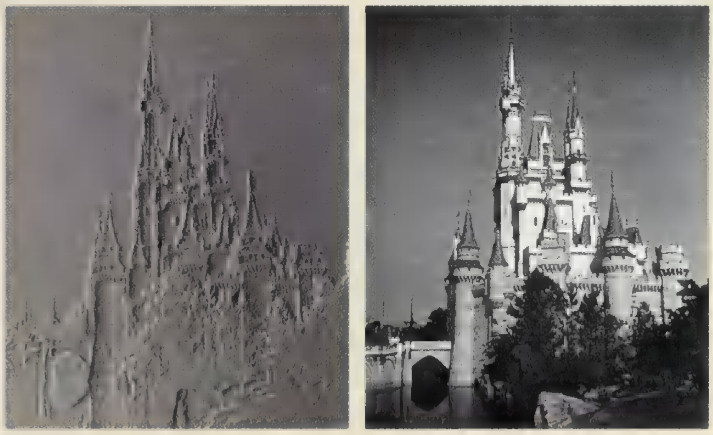
► Translucent glass tiles

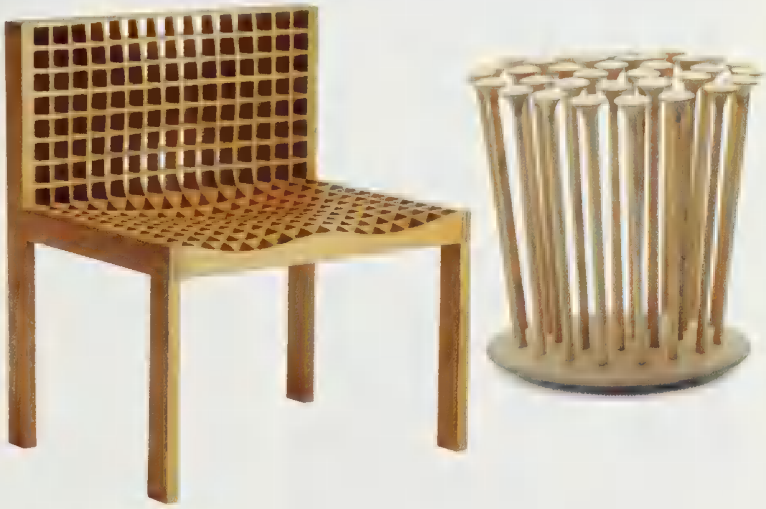


The Fusion collection of handmade, architectural glass is produced in Italy, under the design of Walker Zanger. To create the tiles, two pieces of glass are melted together and a glaze is compressed between the glass pair, imparting color to the tile. After the first firing, the large tiles are cut into mosaic sizes and fired again, melting the edges. The tiles come in an array of sizes and shapes, and 17 translucent colors. 800/540-0235. Walker Zanger Inc., Sylmar, Calif. **CIRCLE 225**

Product of the Month
DuPont Corian technologies

A photoengraving process produced exclusively for DuPont by Backlight Images was used to etch this intricate picture of a castle (bottom left), permanently preserving the 3-D photographic image in the surface of Corian. When backlit (bottom right), the result is a sophisticated interpretation of the photo. The proprietary technology of Corian Bas-Relief signature surfaces transforms Corian via a two-dimensional molding process. The offering enables designers to create signature surfaces with textural variety and depth-of-pattern. The stools shown above showcase the design potential of thermoforming Corian. 800/4-CORIAN. DuPont Corian, Wilmington, Del. CIRCLE 223



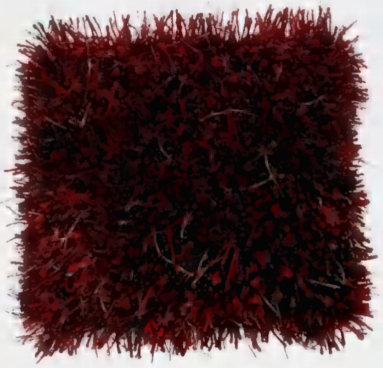


▲ Danish tour

The *Danes on the Move* exhibition presents, for the first time ever in the U.S., the finest work of award-winning young Danish designers. The exhibition, which opened in New York in March, travels to 15 select furniture retailers across the U.S. (this month's stops include Austin and Tucson). All of the pieces on display were designed in Denmark and crafted by prominent Danish furniture makers. The Rockable (above right), designed by Hans Sandgren Jakobsen, is composed of 37 sticks driven into a circular base that rocks slightly. Reminiscent of a stamen, each of the sticks is crowned with a rounded knob, and the ensemble creates a convex seat. The Grid (above left), by Komplot Design/Boris Berlin & Poul Christiansen, features a wooden grid that "recollects the human body." 212/223-4545. Royal Danish Consulate General, New York City. **CIRCLE 226**

Product Briefs

Scandinavian design was on display at this year's Stockholm Furniture Fair, held in February. A few floorcovering and furnishing highlights follow.



▲ Shaggy Scandinavian

Kasthall rugs are milled in the small town of Kinna, in the heart of Sweden's "Tygriket" or "Fabric Kingdom". Woven from the wool of highland sheep, the rugs come in widths up to 25 feet and lengths up to 150 feet. The hand-tufted rugs have no limitations in size, shape, or color. One of the more unusual offerings, Moss, is shown above. Wooden floors are also available. +46 320 143 30. Kasthall, Kinna, Sweden. **CIRCLE 227**

▼ Swede seats

The Millibar bar stool (right) by Anya Sebton features a lower-back-supporting webbed seat and steel tube in powdercoat or chrome, springing from a convex beveled foot. A table that complements the stools comes in three sizes and two heights, with a tabletop in white or gray homogenous laminate. The latest product by Love Arbén for Lammhults is a series of armchairs, easy chairs, and tables named after the days of the week. (Monday, Friday, and Sunday shown below). The seat and back can be upholstered in fabric or leather. +46 472 26 9500. Lammhults Möbel AB, Lammhult, Sweden. **CIRCLE 228**

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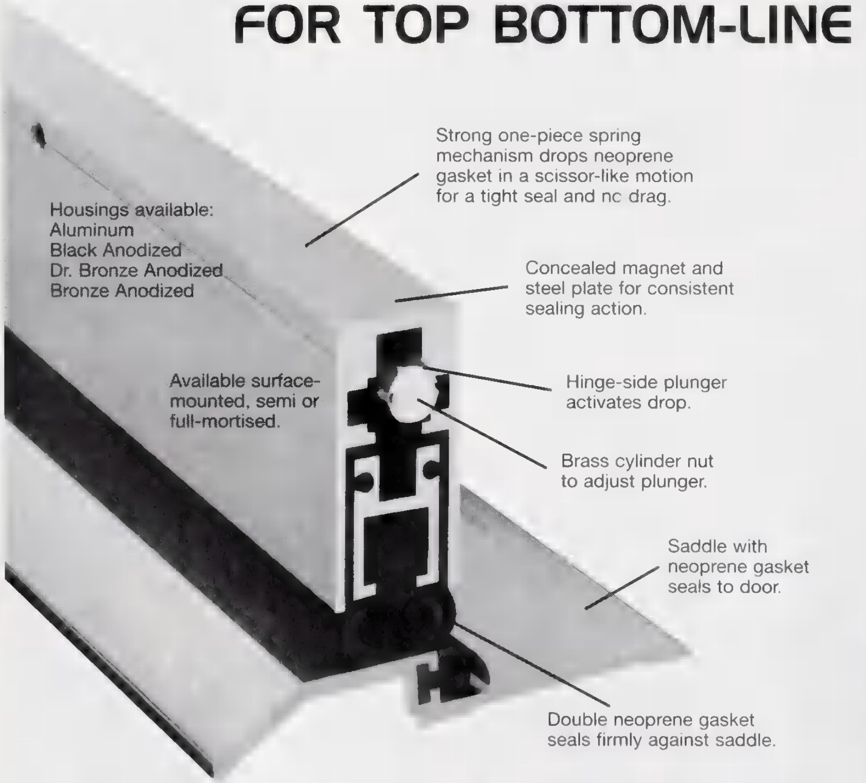
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Product Briefs

▲ Swedish form

One of the leading contract furniture companies in Scandinavia, Skandiform has worked with designers such as Ruud Ekstrand, Jonas Lindvall, Claesson/Koivisto/Rune, and Helene Teidemann. The Dropp series (above) includes a sofa, easy chair, armchair, and tables designed by Claesson/Koivisto/Rune. A daybed/sofa is among the other designs for the company. +46 44 855 50. Skandiform AB, Vinslöv, Sweden. **CIRCLE 230**

▼ Finnish flooring

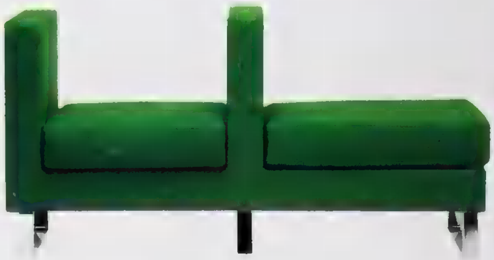
In addition to carpets and other series-production textiles, Hanna Korvela Design has produced numerous textile artworks and liturgical textiles, and provides a design service for other companies. The current line includes: Duetto, a recyclable, clean-lined, cotton knit-paper yarn carpet; Duetto's companion Encore, a cotton knit with strong paper yarn; and Minore, a minimalist wool carpet. +358 (0) 17 288 6688. Hanna Korvela Design Oy, Kuopia, Finland. **CIRCLE 229**

▼ Make room for contract furniture

At its first showing at the Stockholm Fair, R.O.O.M. contract introduced two new series of contract furniture. Workstation "iS" (shown) in oak and colored glass was developed in collaboration with architect Thomas Sandell and Chris Martin and includes a storage unit, writing desk, and PC unit. The "WZ" series, designed by William Zetterman, includes four different types of writing tables in oak and a variety of laminate colors. +46 8 692 50 00. R.O.O.M. Contract, Stockholm. **CIRCLE 231**

▼ Getting the right offecct

At the Fair, Offecct premiered new products and prototypes from such in-vogue international designers as BarberOsgerby (London), Jean-Marie Massaud (Paris), and architect Thomas Eriksson (Stockholm). Eriksson's new F-Seat sofa is designed for waiting rooms or short meetings. F-Seat lacks a traditional back, offering numerous ways of sitting. +46 0504-415 00. Offecct interiör ab, Tibro, Sweden. **CIRCLE 232**



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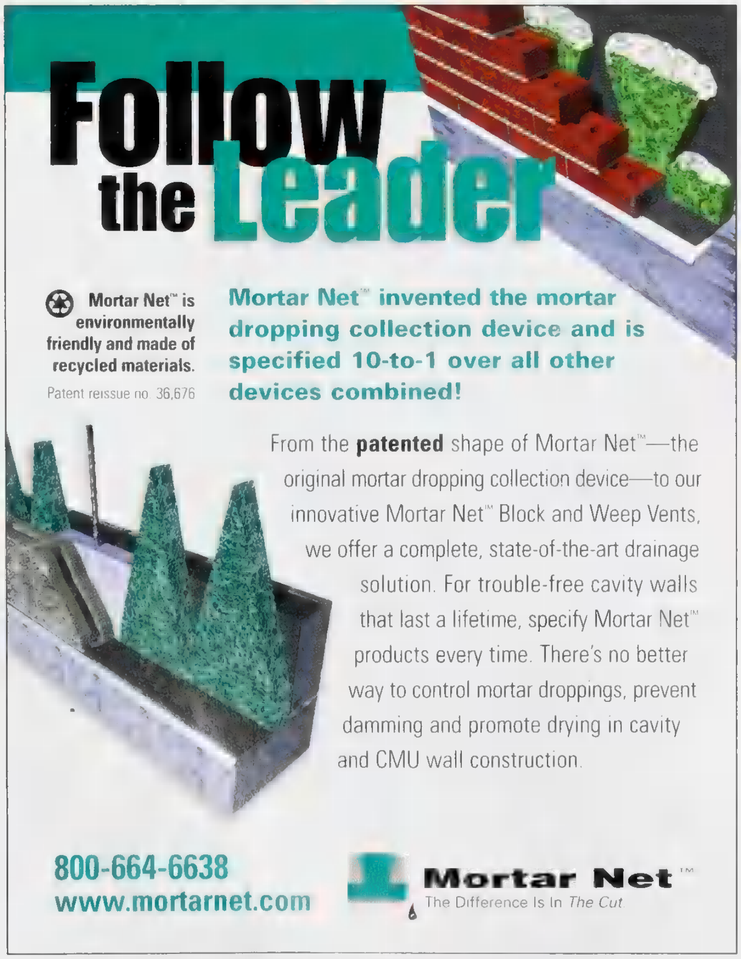
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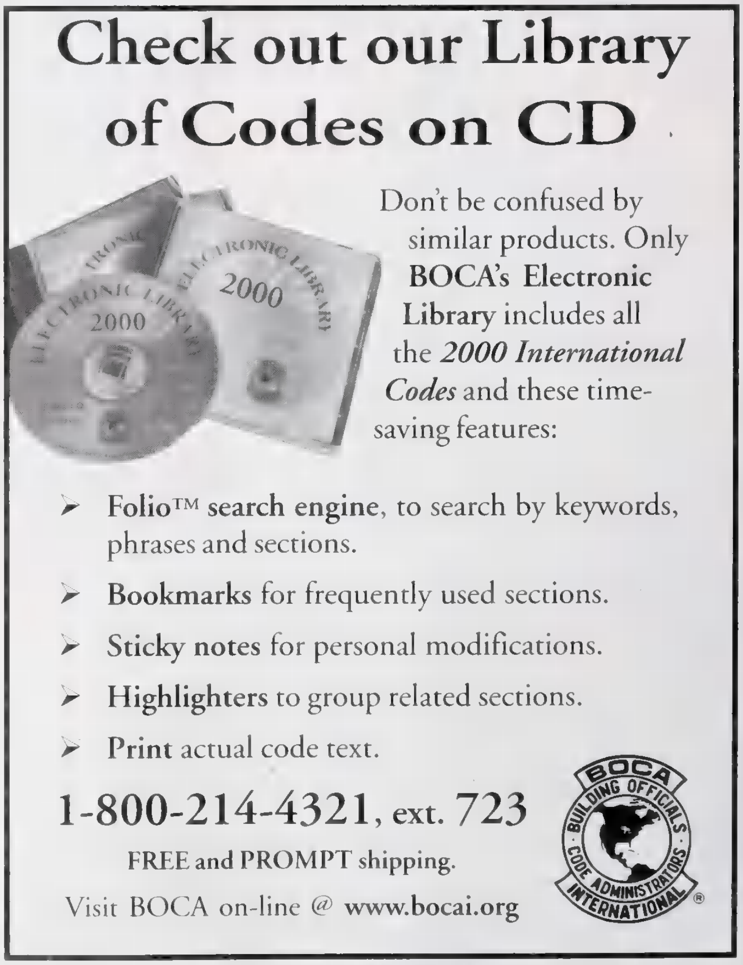
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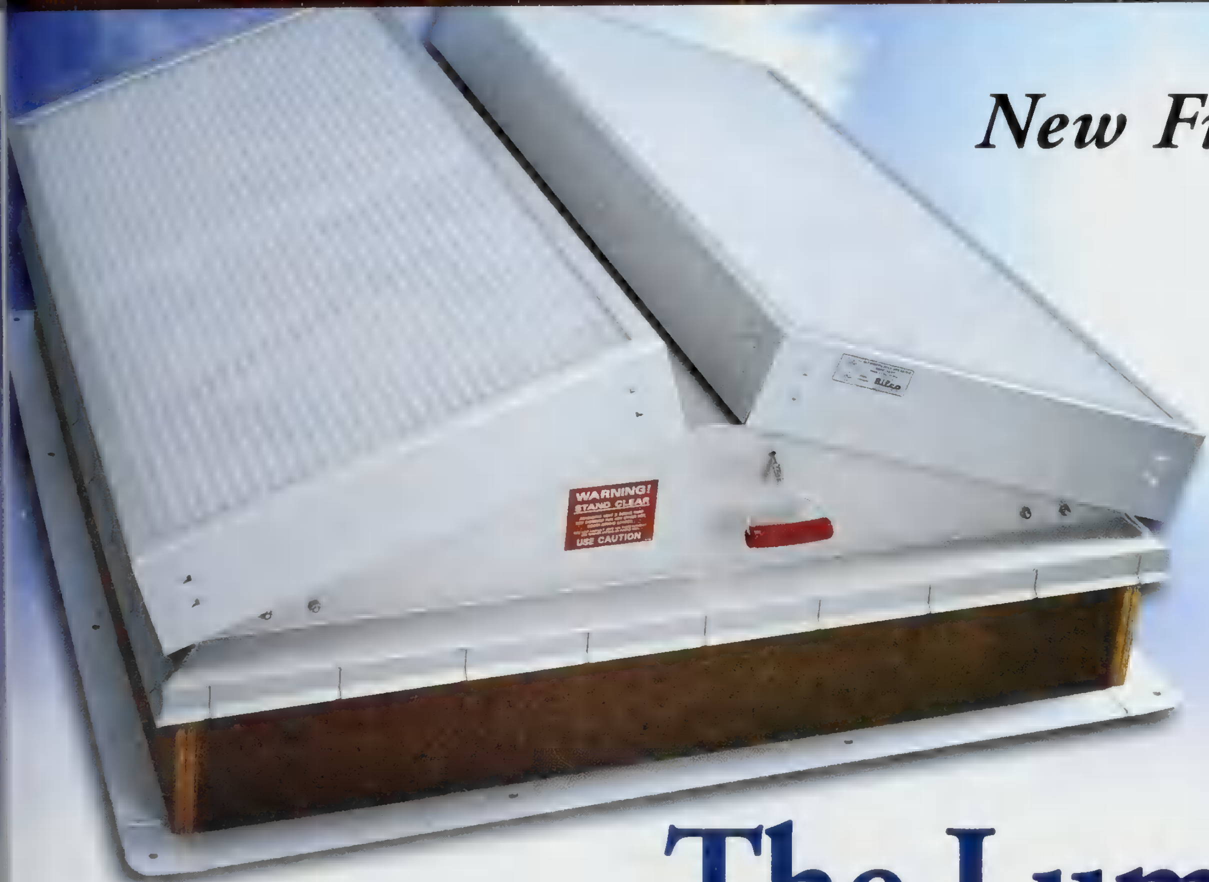

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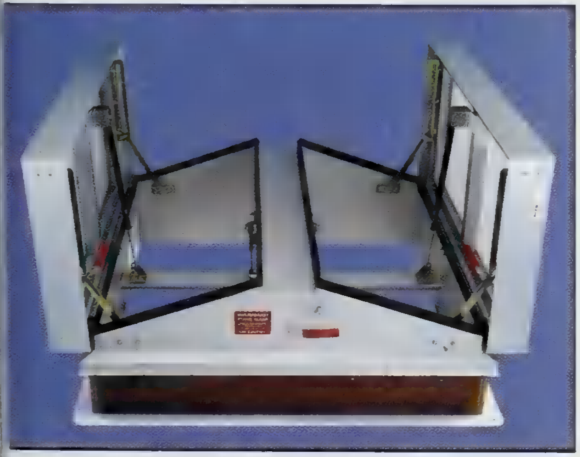

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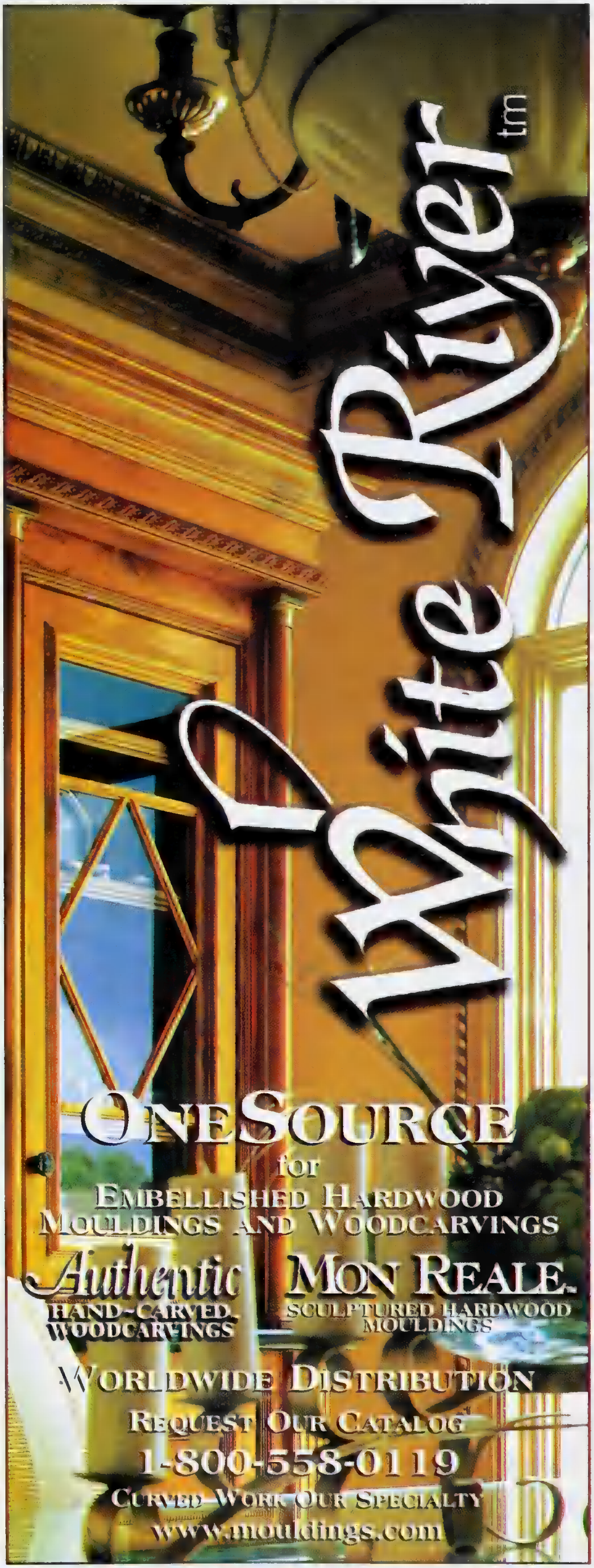

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Product Literature

Color options

The "Color Quest" selector chart covers the complete Chicago Metallic color offering, including Natural, Prestige, Brights, and Door/Frame Systems colors. 800/323-7164. Chicago Metallic, Chicago. CIRCLE 233

Decorative lighting

Meyda Tiffany introduces *Founder's Edition*, its largest catalog to date. The 300-page catalog, featuring thousands of Tiffany decorative lights and home decor, is dedicated to the firm's founder, Meyer Cohen (c. 1907–2000). 800/222-4009. Meyda Tiffany, Yorkville, N.Y. CIRCLE 234

Colored fixture offering

Litecontrol's LiteColors brochure has a 21-color palette of contemporary colors for its line of architectural fluorescent lighting fixtures. The brochure identifies a range of neutral shades, vivid and muted hues, and metallic tones. The LiteSpeed Contractor Starter Kit will aid electrical contractors, design-build firms, lighting designers, and other specifiers with quick-ship lighting requirements in sourcing, specifying, and ordering linear fluorescent lighting fixtures, for shipment within two weeks. 781/294-0100. Litecontrol, Hanson, Mass. CIRCLE 235

Wall and ceiling solutions

Healthcare Environments, a new eight-page brochure from USG Corporation, provides designers, builders, and specifiers with detailed information on a wide range of wall and ceiling products and systems specifically suited to healthcare settings. 800/950-3839. USG Corporation, Chicago. CIRCLE 236

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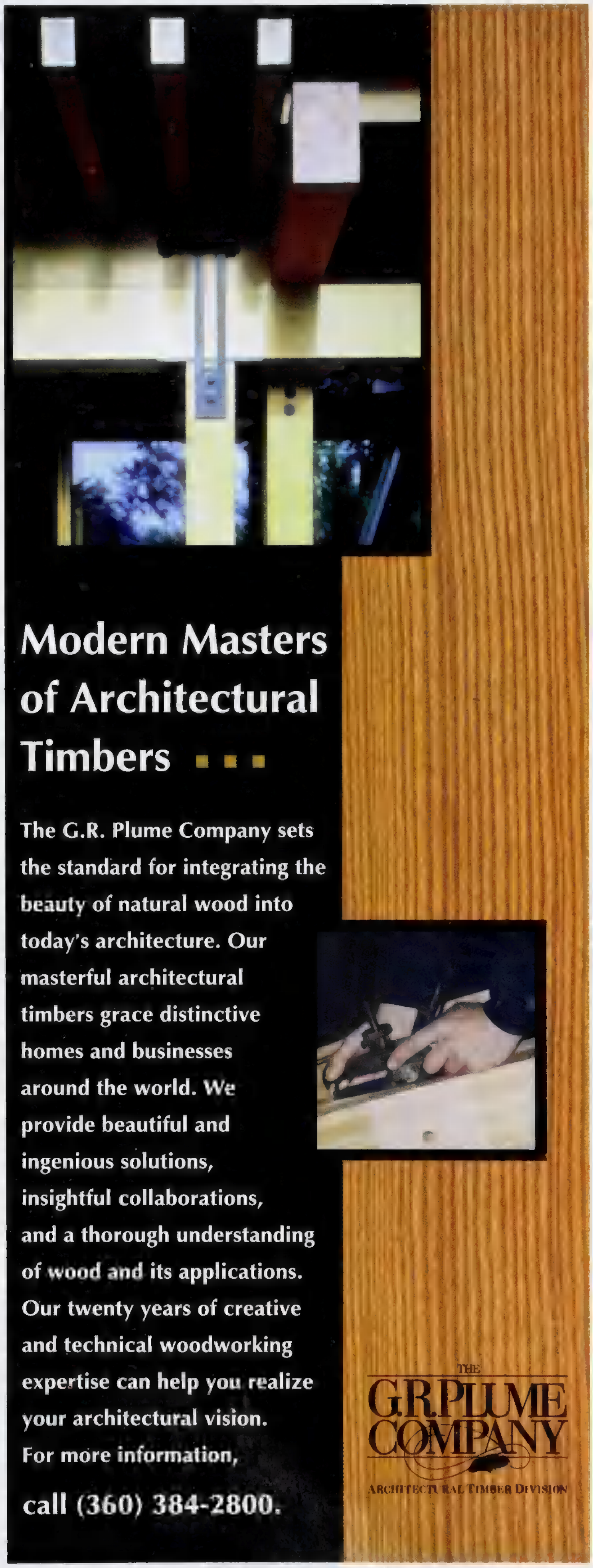

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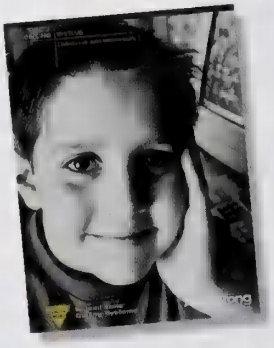
Acoustical education
A new 16-page brochure from Armstrong explains how an acoustical ceiling can help create a more effective environment for learning and teaching, as well as improve lighting quality, limit the spread of mold and mildew, and reduce long-term maintenance costs. The literature concludes with a description of Armstrong's Ceilings Recycling Program, which provides schools with the opportunity to recycle used acoustical ceilings from renovation projects, rather than dump them in a landfill. 877/ARM-STRONG. Armstrong World Industries., Inc., Lancaster, Pa. **CIRCLE 237**

Interior and exterior doors
Simpson Door Company introduces a new brochure featuring Infinity Doors, Simpson's latest collection of interior and exterior doors. 800/952-4057. Simpson Door Company, McCleary, Wash. **CIRCLE 238**

Sandstone products
A new brochure from Cleveland Quarries highlights the sandstone producer's line of landscape stone for commercial, institutional, and residential applications. The products include patio stone, wall stone, ledge rock, rubble stone, and custom sandblasted stone signs. 800/248-0250. Cleveland Quarries, Amherst, Ohio. **CIRCLE 239**

Elevator/escalator guidelines
NEII-1-2000, Building Transportation Standards and Guidelines provides a reference for the dimensional, performance, application, and evaluation requirements of building transportation systems: elevators, escalators, and moving walks. Written by the Performance Standards Committee of National Elevator Industry, Inc. (NEII) and published by Elevator World, Inc., the standards supply standardized information, which the end user can incorporate in drawings and specifications. 800/730-5093 x119. Elevator World, Inc., Mobile, Ala. **CIRCLE 240**

Scaffold safety
The National Roofing Contractors Association now offers *Scaffold Safety: From the Ground Up, Part 3: Aerial Lifts, Forklifts and Fork-Mounted Work Platforms,* in a book, video, and manual format. 800/323-9545. National Roofing Contractors Association, Rosemont, Ill. **CIRCLE 241**



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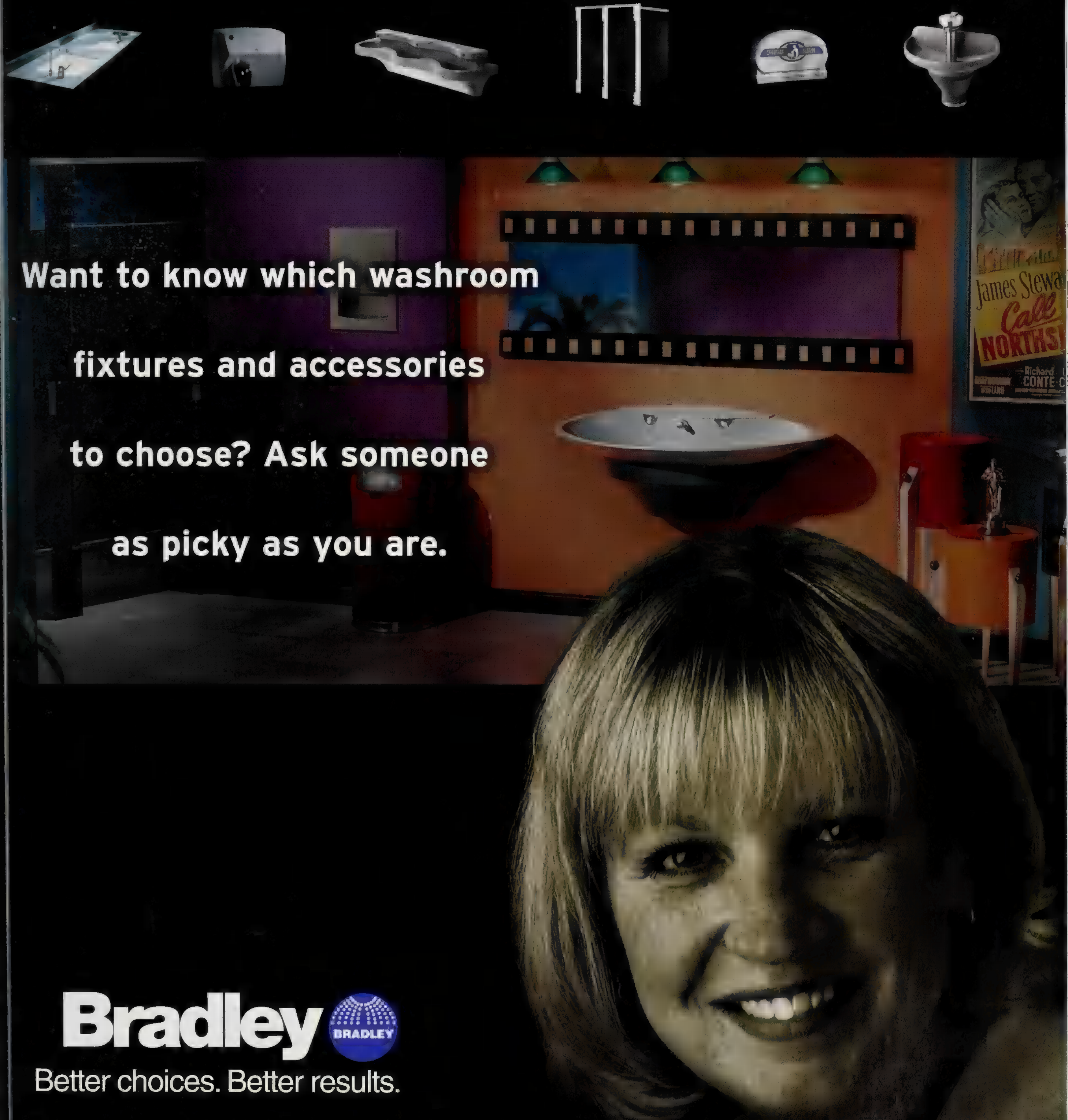

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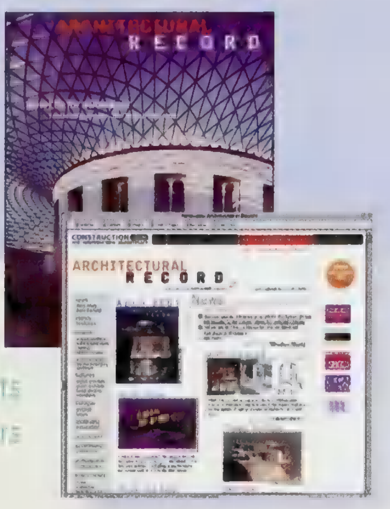

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ANSWERS

Questions appear on page 146. To receive CES credits, fill in the education reporting form below or on our Web site (www.architecturalrecord.com).

1. The stack effect is a basic air-movement principle based on the fact that warm air rises. In order for the stack effect to function, cool air must be supplied at the bottom of the space and allowed to flow upward as it warms to an exhaust chimney or tower. Stack ventilation is calculated by the distance from the top-floor ceiling to the top of the stack.

2. Natural ventilation lowers the cost of mechanical air conditioning. Natural ventilation is enhanced when there is a high, narrow space with cross ventilation from windows on opposite sides of the space. The windows suppling the air also provide daylight, which reduces energy consumption from electrical lighting.

3. Night flushing occurs in naturally ventilated buildings that have a stable mean radiant temperature from thermal mass concrete or masonry. The mass provides a thermal damper using less energy to heat and cool the building. When cool air is allowed in at night, the warm air is flushed upward and out.

4. Airflow is affected by many factors. The size of intake-air grilles limits the amount of air that can be utilized. The geometry of the space affects the flow of the air, as well as the placement of the openings to the stack. Another factor of airflow rate is the amount of heat absorbed by the tower or chimney. Heat in the chimney, as well as wind pressure differentials, assists air draw.

5. Natural ventilation is used in the U.S. during the cool season. However, it works best in climates that have low humidity and become cool at night even when they are warm during the day. In the United States, this type of climate is limited to mountain areas. Much of the United States does not cool down considerably at night in the hot season, so night flushing would not work unless the imported air was artificially cooled and dehumidified. Air conditioning is used to remove humidity—which is prevalent across much of the U.S. during the hot season—from warm air.

6. Parallel airflow uses fans to pull fresh air into a floor cavity. From there, it travels over heat exchangers, then through a floor grille where it is introduced to the building's occupants. Stale, warmer air collects at the ceiling and is drawn along the ceiling until exhausted.

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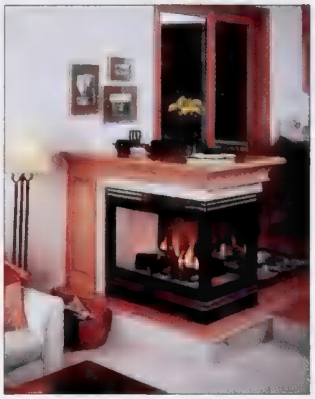

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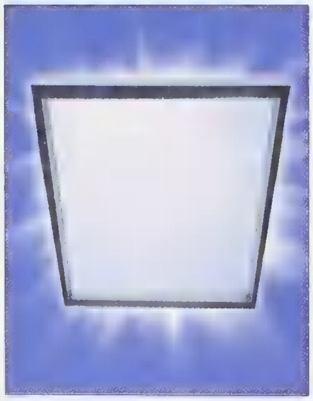

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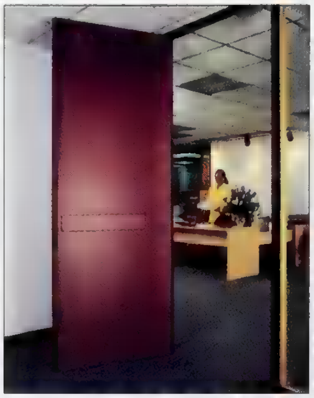

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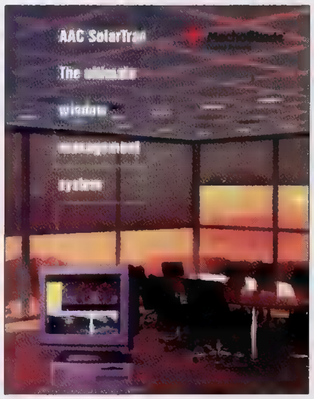

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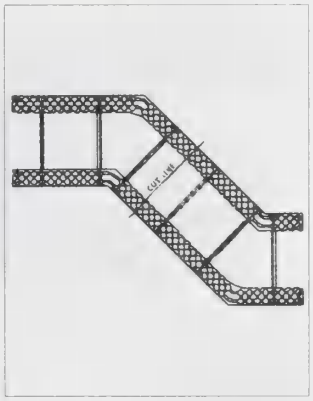

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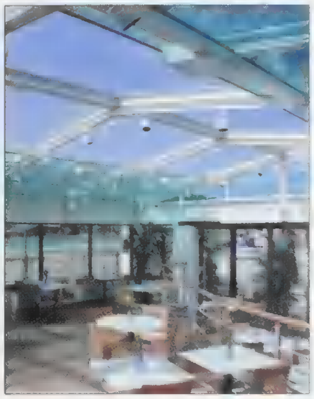

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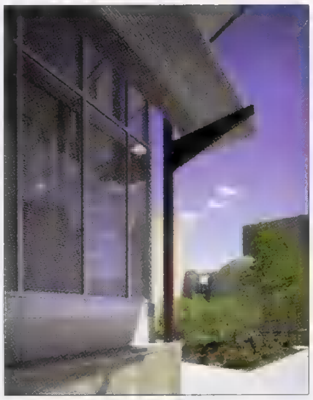

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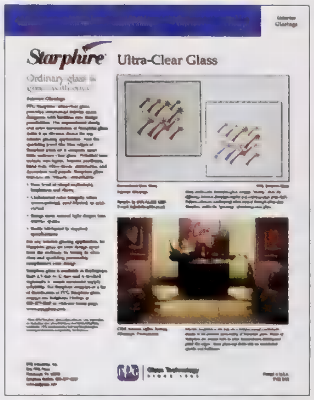

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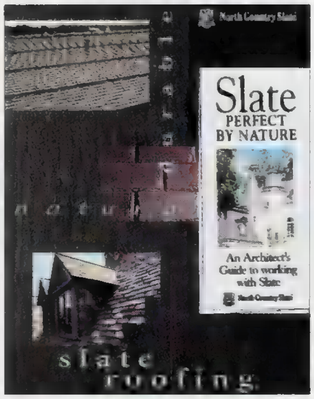

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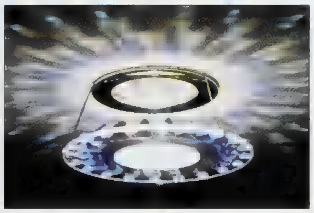

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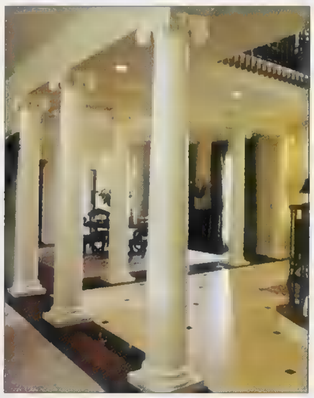

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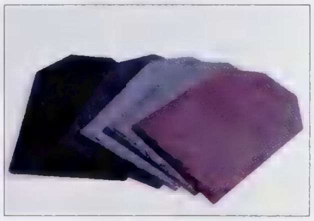

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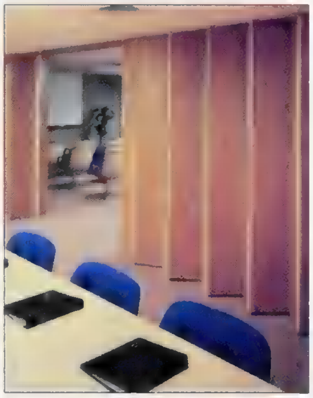

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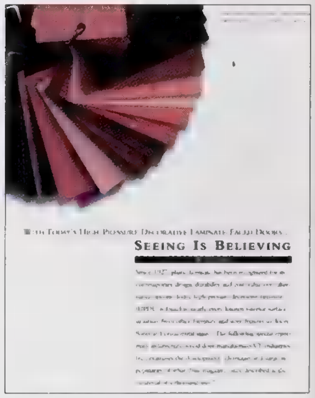

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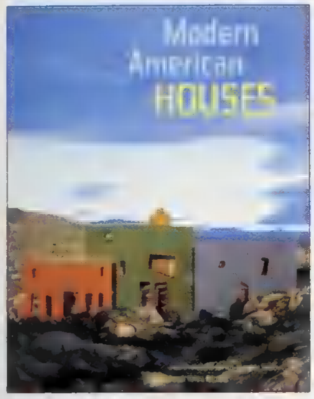
Modern American Houses



This 230-page book is packed with color photographs of more than 75 houses featured in Record Houses since 1956. New essays explore the evolution of home design decade by decade–Thomas Hines on the '50s, Robert Campbell on the '60s, Suzanne Stephens on the '70s, Charles Gandee on the '80s and '90s. $49.50. To order please call 212-904-4635.

Record Houses

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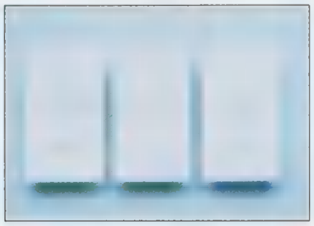
Lutron's new SeeTouch™



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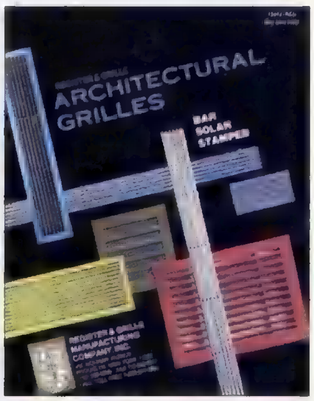

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2002 ICU Design Citation Award

Pediatric Intensive Care Units

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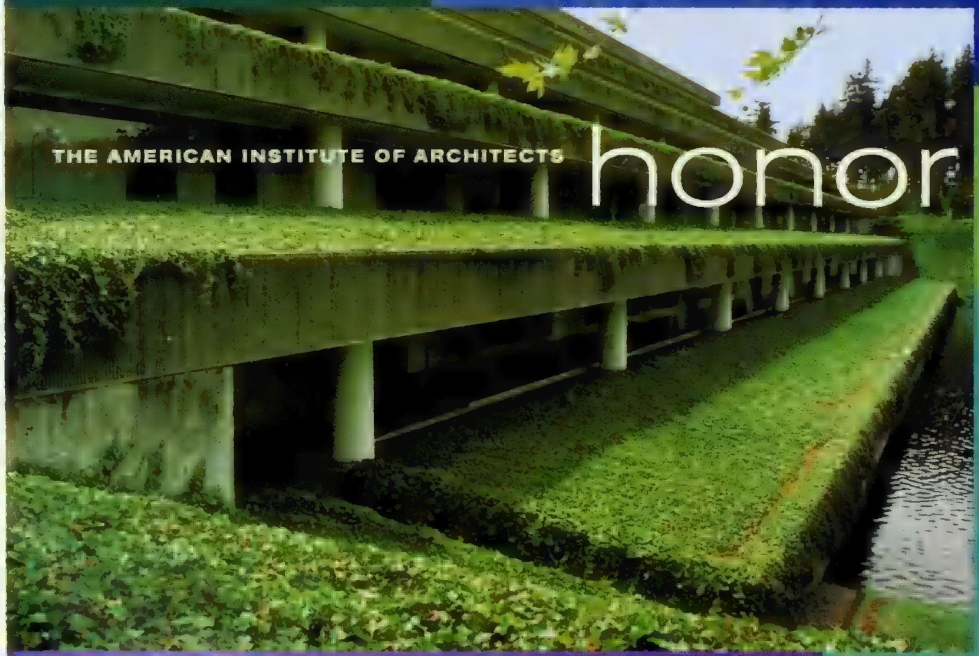
The Society of Critical Care Medicine (SCCM), American Association of Critical-Care Nurses, and the **American Institute of Architects Academy of Architecture for Health** are accepting applications for the 2002 ICU Design Citation Award. The $500 award honors the design of a pediatric critical care unit that combines functional ICU design with the humanitarian delivery of critical care. This awards program recognizes exceptionally designed units and distributes examples of outstanding designs.

Projects of past winners and runners-up are featured in the *ICU Design Video and Booklet.* The winner of the 2002 award and entries receiving honorable mention will be added to this publication. The package is a valuable tool for ICU design teams looking for ideas on everything from space planning to details. *Critical Care Unit Design & Furnishing* will help ensure that all team members optimize their contribution to the design effort, from concept to completion. Call SCCM at 714-282-6000 for more information about these products.



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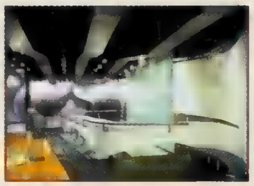

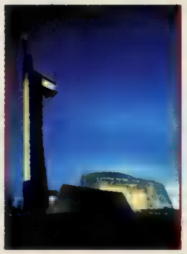

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Current Trends in
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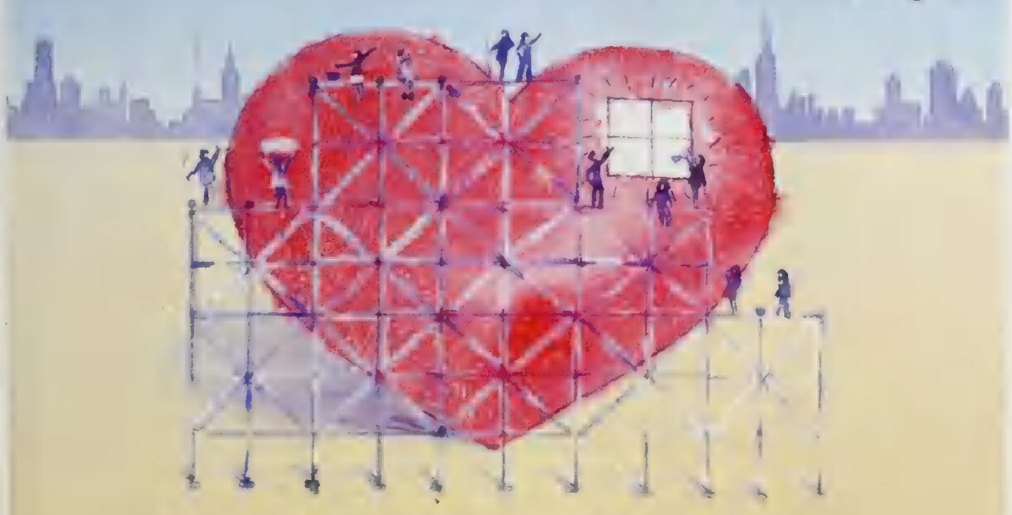

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OFFICIAL PROPOSAL

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Dakota Jackson: A wizard of craft plays with illusion

Interviewed by Jane Kolleeny

Dakota Jackson comes from a family of magicians and, like Houdini, he named himself. In fact, he fashioned his Wyoming cowboy title from his Hebrew name: Yehuda ben Yakov (i.e., "son of Jakob" or . . . voilà: Jackson). This kid from Queens is now 51 years old. From his early days as a wizard fashioning boxes for rabbits and people to disappear into, to the 1970s bohemianism of the SoHo art scene, to entrepreneurial furniture-making, to designing Steinway's Millennium piano—Dakota, it seems, can walk any walk, talk any talk. In fact, he's made a career of reinventing himself. Today, his factory in Long Island City employs over 100 people, and he presents himself as an impresario of a multinational troupe of furniture crafters.

Q: *Do your early days in magic relate to your current profession?* Capturing and keeping people's attention is the magician's art, a trick I learned as a child performer. Designing is the same. You grab the audience and keep their attention by introducing and prolonging a design narrative. These days, as a content provider at the Dumb Box, which is a narrative space, an interactive, performance-art showroom that opened last month in SoHo [New York], I've come full circle, bringing together performance and design.

Tell us about the thing you are best known for—your furniture designs. As a builder, I experimented with materials and making things, both small objects and large spaces. This led me to furniture, which eventually led me to develop a variety of collections, or narrative themes, including the Library Chair Series, originally commissioned by Pei Cobb Freed for the San Francisco Public Library and then used by Legoretta and Polshek in some of their work. I've designed furniture for companies such as IBM, Starbucks, and the Four Seasons Hotel. I have displays at the Cooper-Hewitt, Brooklyn Museum, the America Craft Museum, and others.

Tell us more about the Dumb Box. Ongoing work with Peter Eisenman on my Los Angeles studio inspired the Dumb Box—"dumb" because it's silent about a specific purpose. I conceived of it as a 24-hour space for displaying a kaleidoscope of interweaving themes: education, information, architecture, branding, and commerce. Soon, it will feature the work of 100 designers and 100 architects, work from the archives of design museums, and displays from companies and conservation groups. ShoP/Sharples Holden Pasquarelli [of New York] and I designed it from conception to delivery in four weeks! It's transparent to the street with a glass front. The boxy interior space has a large screen for viewing my multimedia presentations. I've spliced together a collage of narratives from early Godard films. Eventually I want to feature the lives of some of the workers at my factory.

I understand Dumb Box has another meaning. Dumb Box (DB) also symbolizes the Dissolving of Barriers, breaking down the boundaries between disciplines, between factory and point of commerce; between formal architecture and the street; between the real and virtual—a switchboard for any activity. In the old days in SoHo you could see what lights were on and what spaces were being lived in and then you knew who was living in the neighborhood. Today, my screen functions as a similar beacon of activity, dissolving barriers between outdoor and indoor life.

Photograph by André Souroujon

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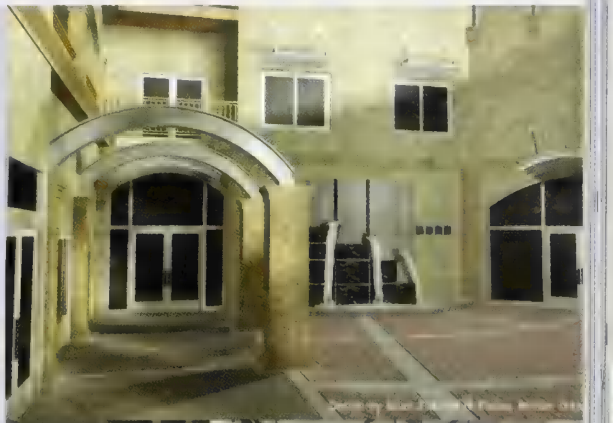

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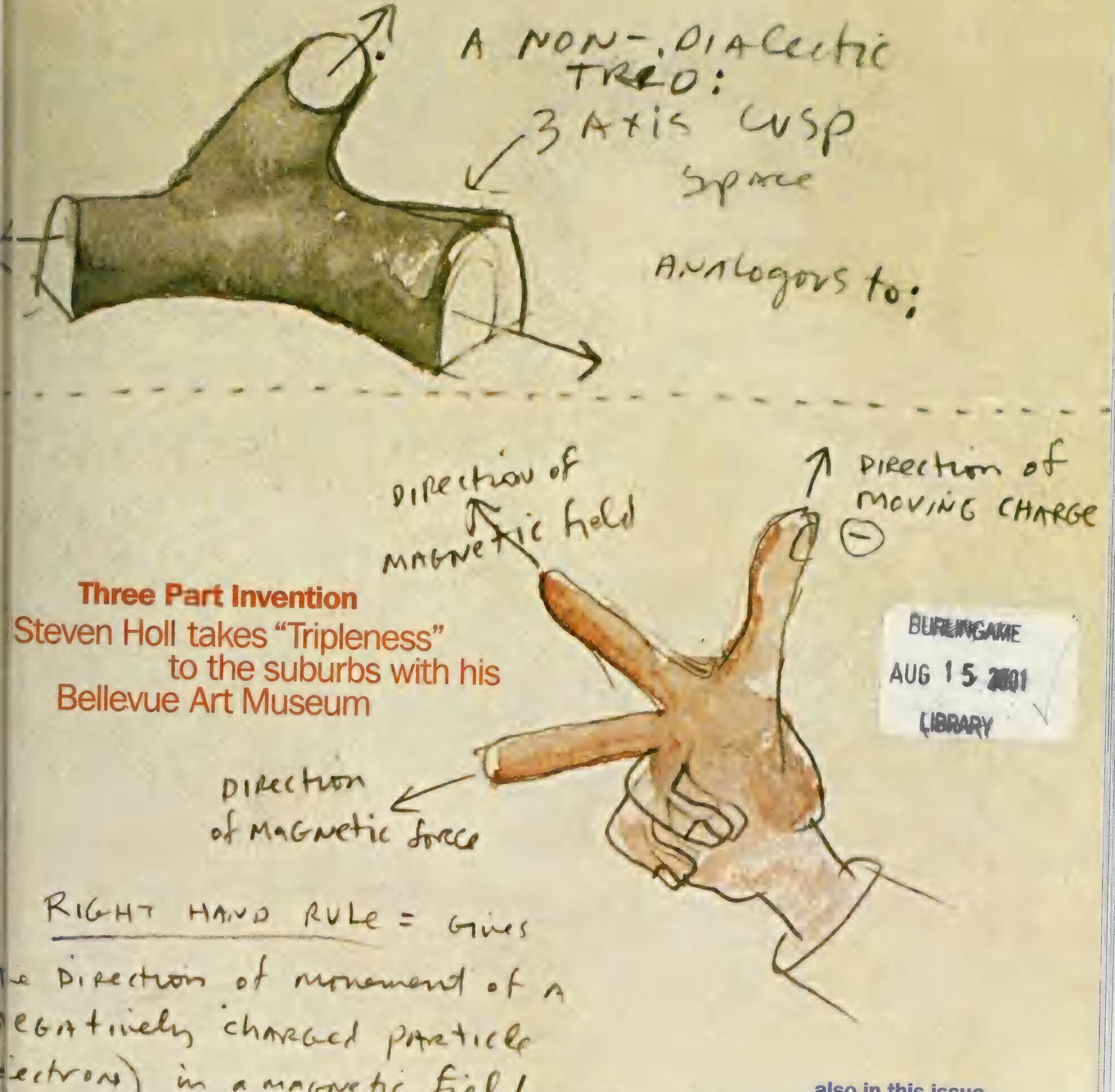

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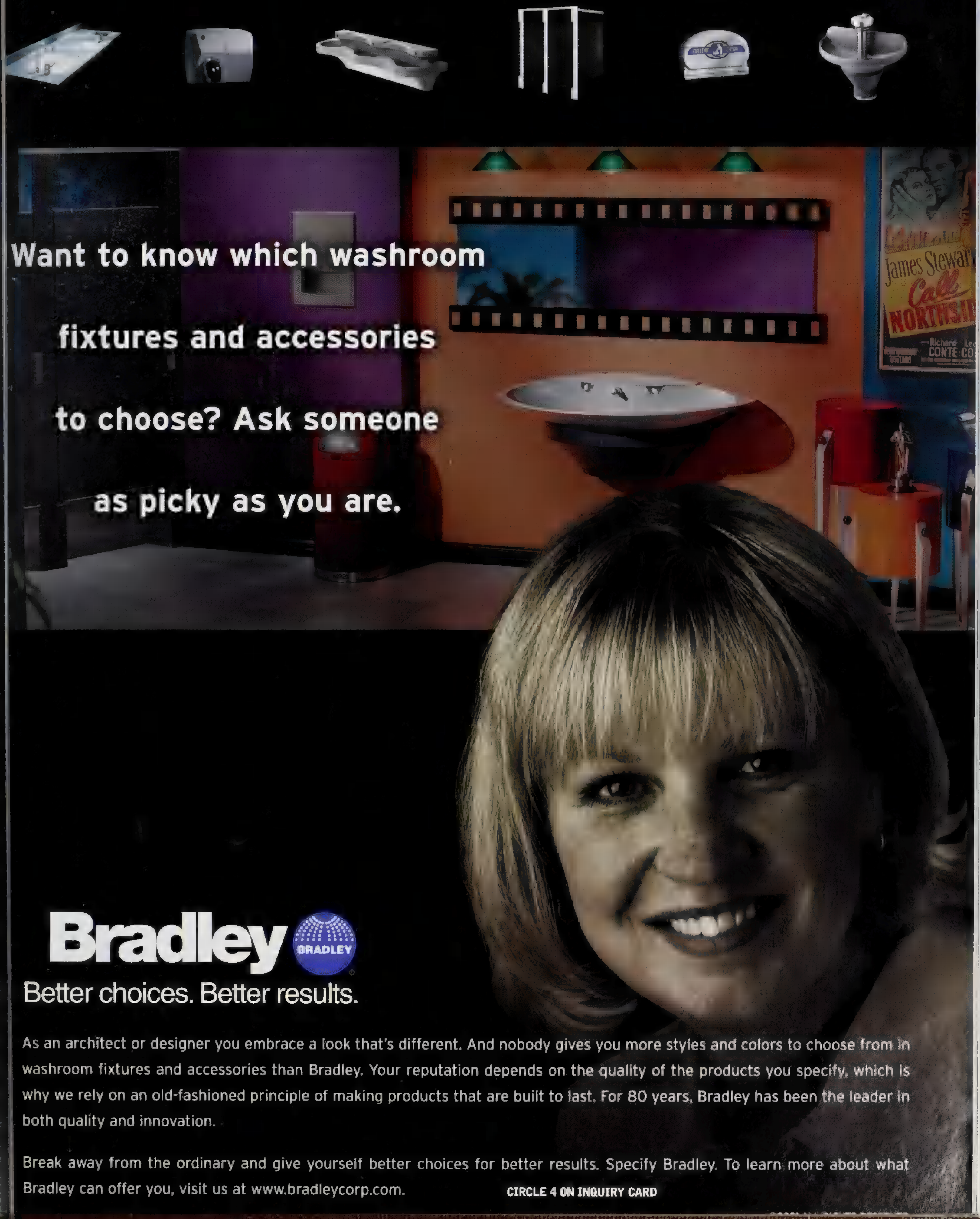

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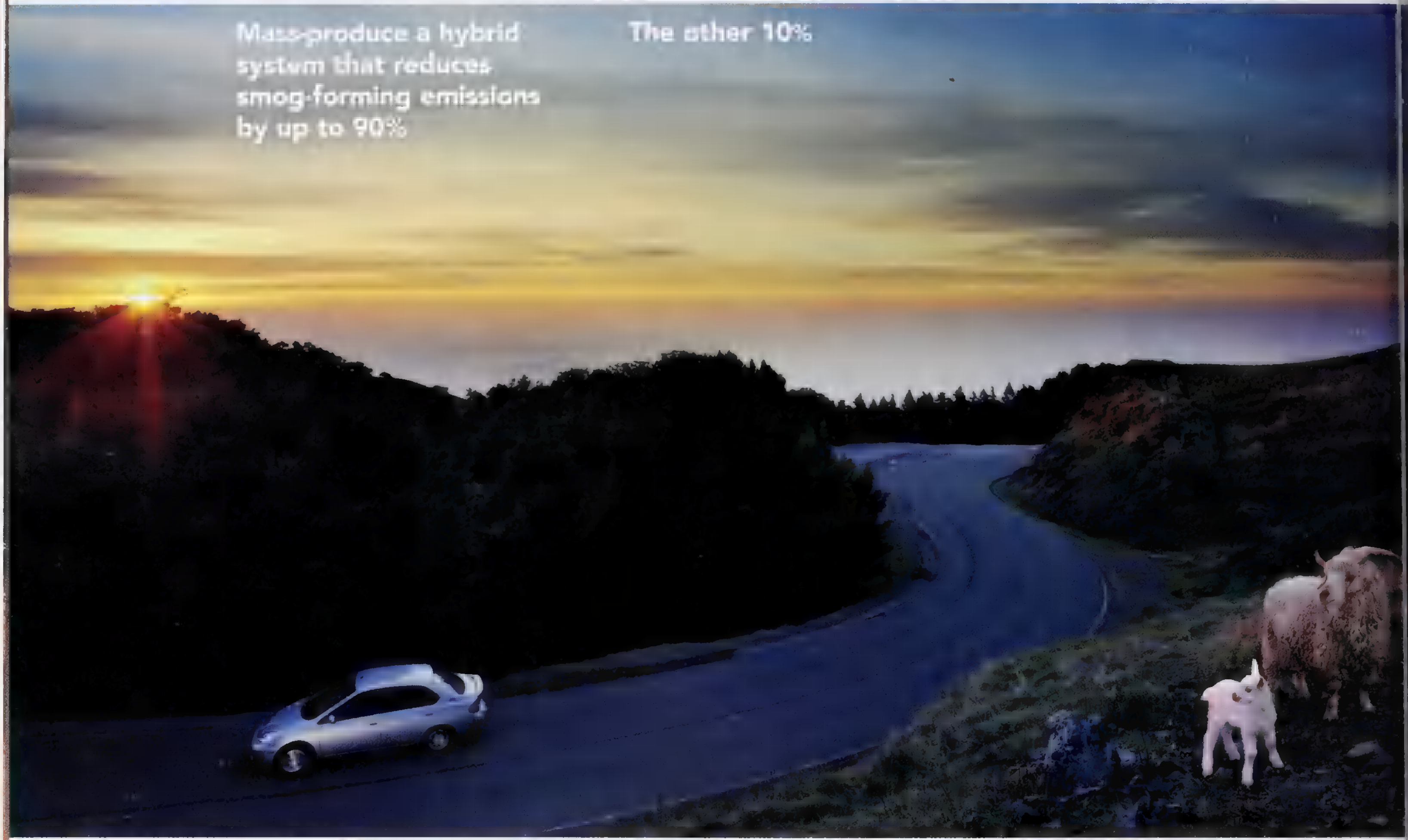
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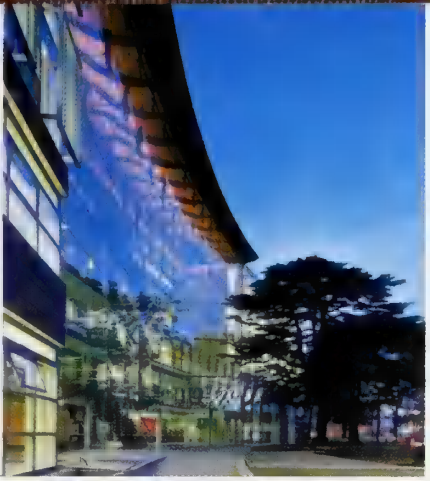

On the Cover: *Steven Holl's conceptual watercolor for the Bellevue Art Museum*
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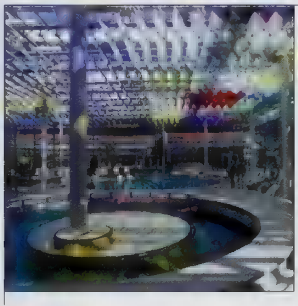

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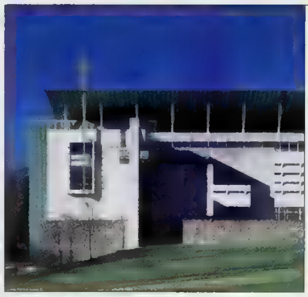

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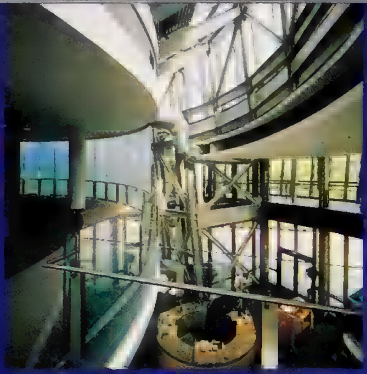

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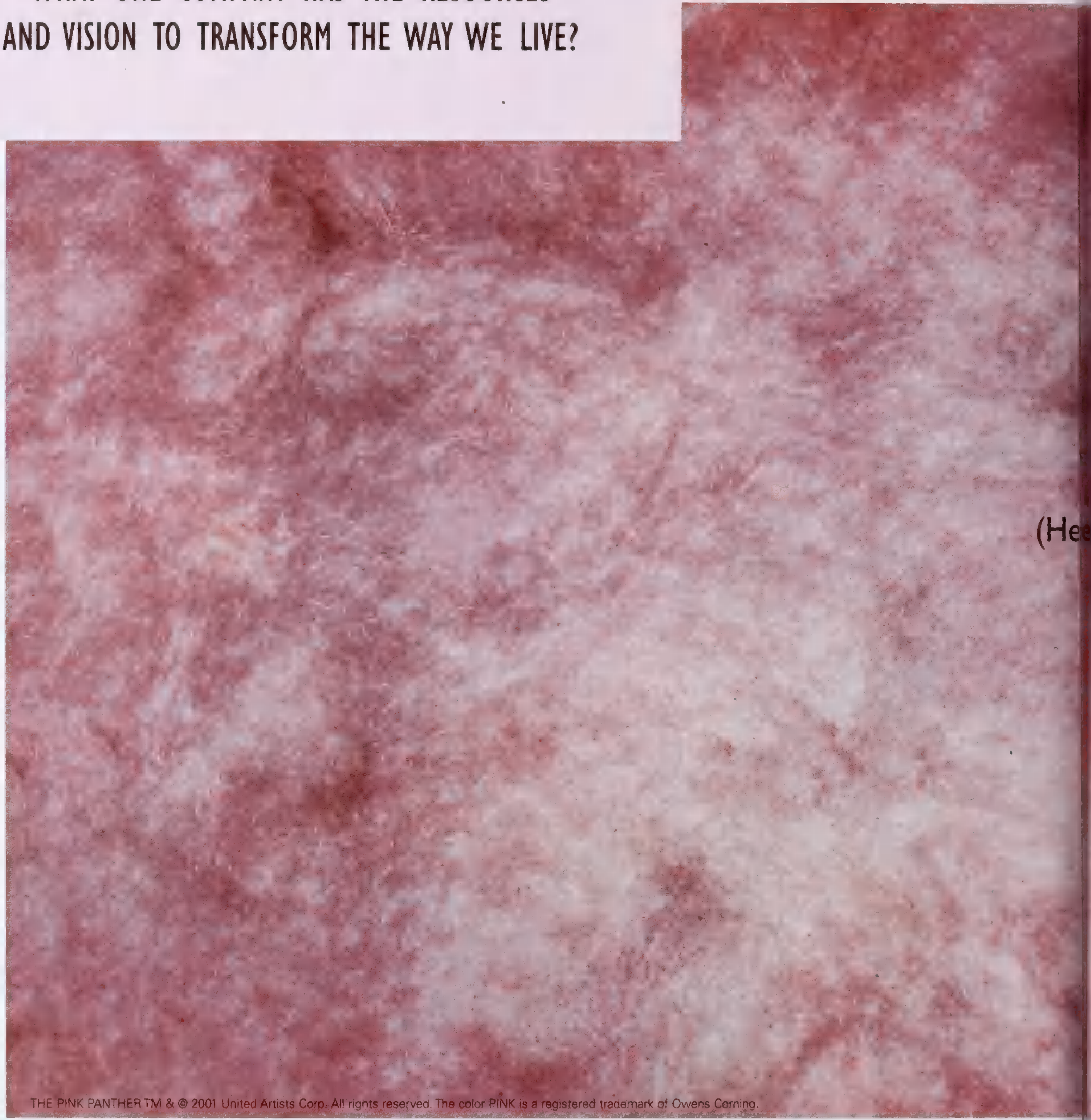

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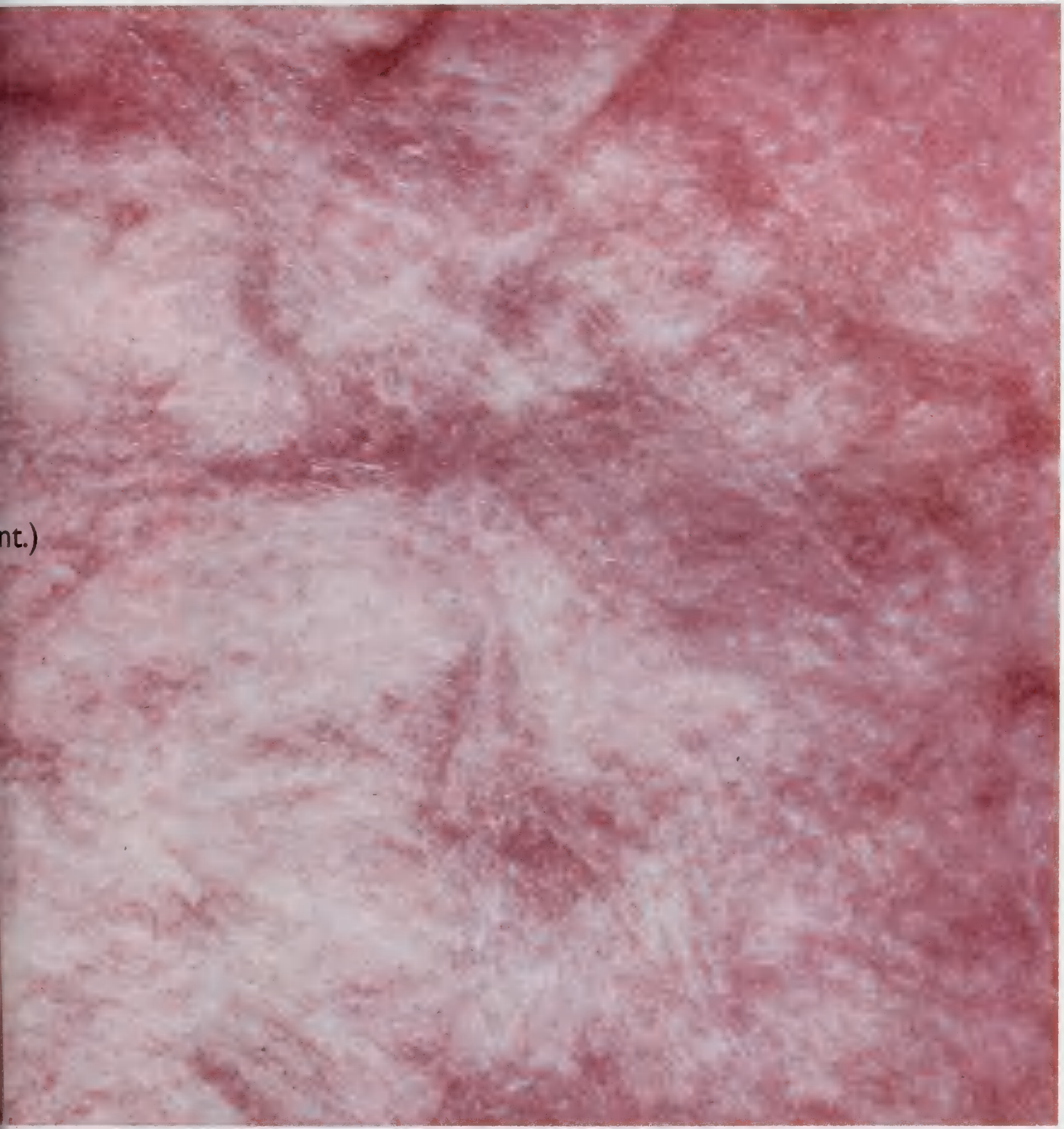

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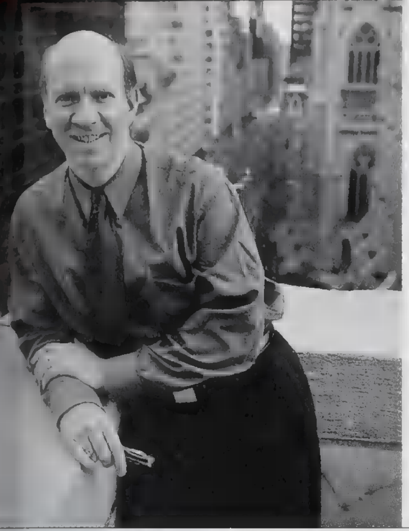

Going pastel

Editorial

By Robert Ivy, FAIA

I've always had a soft spot for the Emerald Coast. That's Florida's current euphemism for the strand alongside the northern Gulf of Mexico from Pensacola to Panama City, a formerly pristine zone bordered by crystalline, blue-green water and blazing white sand. After years of languishing under a cloud of indolence, the sands are sizzling with development heat fueled by a little resort town called Seaside.

In the last 20 years, the whole region has morphed from somnolent and unpopulated to a hyperkinetic urban fringe. Highway 30-A, which hugs the coastline, has become almost unrecognizable—a succession of four-story stucco mini-malls and tasteful New Urbanist enclaves. With thousands of people moving in and tourism rampant, infrastructure seems overstressed, prompting both natives and newcomers to complain about the lumbering procession of hunky SUVs that dominate the roadways. Nearby Highway 98, formerly a two-lane affair, is being widened for heft and speed; fast food is knocking at the door. Seaside had caught on with a vengeance: The Emerald Coast has gone pastel.

Did the owner of those precious 80 acres, Robert Davis, ever dream of the implications his ideas might have when he kicked off development in 1981? The original plan, conceived by Andres Duany and Elizabeth Plater-Zyberk, quickly captured the national imagination, fostering numerous spin-offs and widespread recognition. For Davis and northwestern Florida, however, the ideas have worked almost too well. Spurred by the public clamor, other developers have confiscated his original idea—a dreamy, small-town vernacular vision—and built it all around him. Hemmed in, he literally had nowhere else to go. "If he can do it, why can't I?" they seem to be saying, while everyone's property prices and land values continue to skyrocket.

Witness Davis' neighbor, the St. Joe Paper Company, which owns the 499 acres surrounding Seaside. They have contracted with the Arvida Corporation to develop a Seaside-inspired upscale community called Watercolors that encircles the original. It's hard to tell where one stops and the other starts. Thank goodness Seaside's immediate neighbor had the foresight to hire Cooper, Robertson & Partners, a distinguished architectural firm, as planners. Their elaboration of the original Seaside pattern fits the original scheme, though in a more expansive way. Cooper, Robertson and other talented firms, including Graham Gund, the Rockwell Group, and LRK Architects, are setting the mark for quality, and it appears to be solid, if not wildly imaginative. But such a capital-intensive development for the well-heeled would be astonishing if it veered too radically from the formula. The units, apparently, are selling like hotcakes.

Watercolors is just the tip of the iceberg, or the sand dune, as the case may be. Further down the coast, in both directions, a multitude of other exemplars of 1990s prosperity—Seaside's progeny—dot the landscape: Carillon Beach, Rosemary Beach, with the occasional real, live town like funky Seagrove thrown in for authenticity, although under huge pressure to convert to quaintness. Apparently every crossroads market wants in, but unfortunately not everyone can (or should) replicate the original. Many of the later structures are cheap knockoffs of the first New Town with the Old Ways.

With its accelerating power, New Urbanism may be dropping the "New" on the Emerald Coast. Such is the ironic force of a single, strong idea. You cannot own or control it. Who controls Davis' dream, once out of the box? Who owns it? In this specific case, no longer Davis, but a large corporation, and a multitude of lesser lights. For the Florida panhandle, explosive low-scale development may be preferable to the VA-hospital look-alikes down the beach at Destin, but, as anyone knows, too much sugar, or pastel, can wreak havoc on your system.

This editorial was inspired by a "From the Field" piece written for www.architecturalrecord.com.

Robert Ivy

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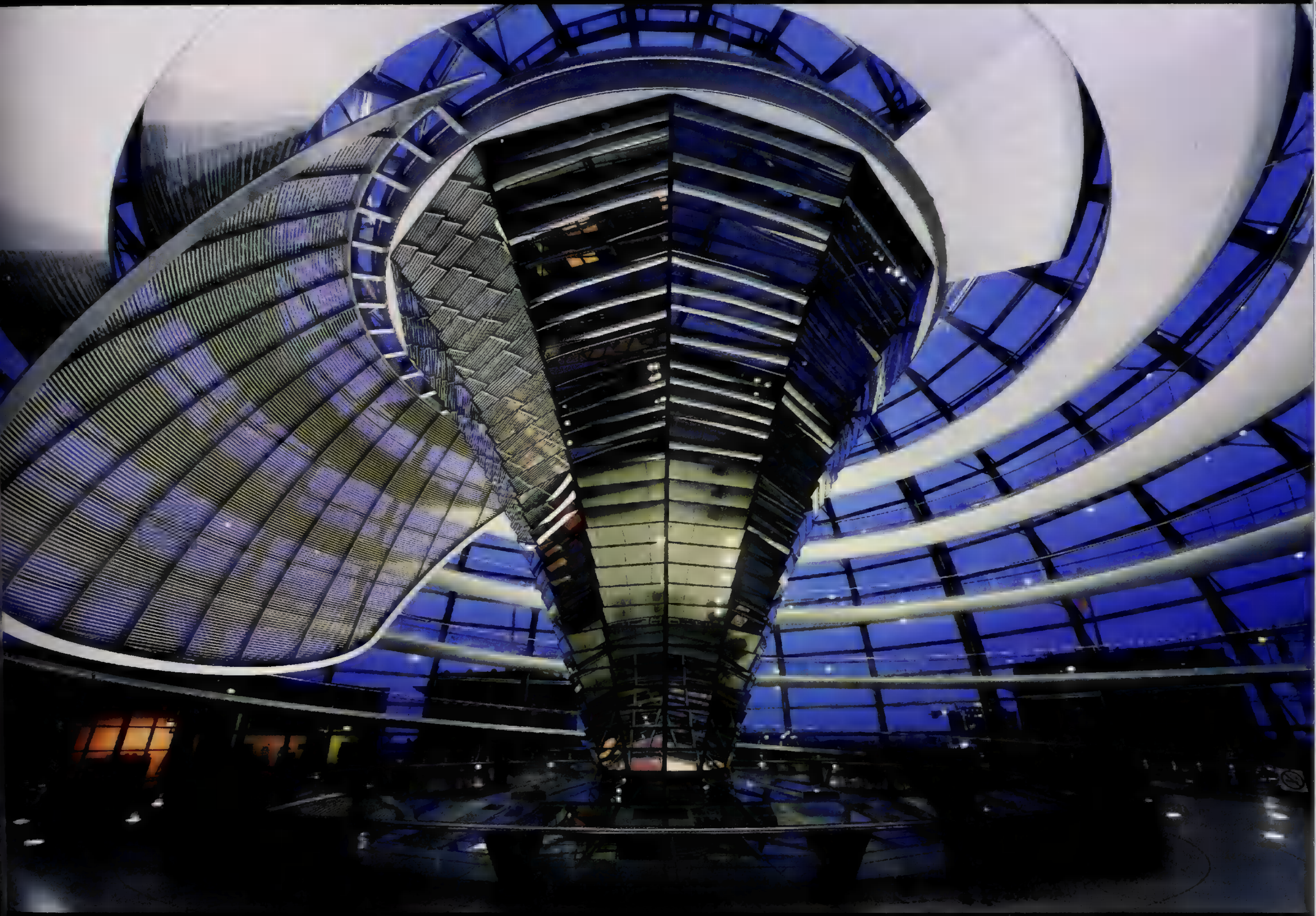

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By Barbara A. Nadel, FAIA

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Preserving Art Amid an Island Setting

Interior living spaces with natural light and panoramic waterfront views are ideal for entertaining and relaxing. When an art dealer wanted an 800 square foot, two story addition with 360 degree lake views for his weekend retreat on Candlewood Isle, Connecticut, he turned to New York City architect Jeffrey Berman, AIA, principal of Jeffrey Berman Architect - and to Marvin Windows and Doors for the big picture solution. The house, located in the middle of man-made Candlewood Lake, was originally built with Marvin products, and both the client and Berman chose Marvin for the addition.

The design goals were to create a large space for entertaining, protect an art collection and capture the magnificent views overlooking the garden and the lake. Marvin was the only manufacturer to provide the flexibility needed for different sizes and shapes, including larger assemblies. The wide expanses of glass maximized views, while retaining a smaller, residential scale for a grand window wall, and avoiding a curtain wall look. Window trim is painted on the outside, and provides the only opportunity to add color to the building's exterior palette of natural materials.

"The client wanted Marvin Windows and Doors, because they offer the best thermal performance and airtight seals to protect artwork from dust and dirt. Humidity and temperature control were also considerations in the windy lakefront environment. We used insulated double glazed, operable windows with integrated screens. On a cool summer night, the clients will open a window, enjoy the breeze, and feel like they're outside," said Berman.

Beachfront Conditions Provide Design Challenges

Hurricane-strength winds, extreme temperatures, ocean views and natural light were the environmental design criteria for a home facing the Atlantic Ocean in Locustville, on Virginia's Eastern Shore. This seaside summer residence - designed by Don A. Swofford, AIA, principal of DASA, in Charlottesville, Virginia - in classic Colonial Williamsburg style, had to withstand hurricane winds exceeding 135 miles per hour. The Marvin Magnum Window series was specifically chosen to provide the historic house appearance and withstand hurricane wind loads.

"The code calls for 105 mph wind resistance, but the owner wanted to design to 135 mph for safety. The windows in the rooftop lantern could not have hurricane covers, so we designed the lantern with a steel frame running down to the foundation. Marvin's Magnum series provided 1-1/2" wide custom detailed muntins, solid thermal panes and Authentic Divided Lites. Year-round temperature swings at this Atlantic beachfront vary from 105 degrees in summer to 10 degrees below zero in winter. These windows provide good R-values to reduce interior cooling and heating loads," said Swofford.

"Marvin helped us meet our design goals by manufacturing high performance windows to reflect the Colonial Williamsburg style, while cutting project costs by 40 percent. As the first architect in Virginia to use Marvin Windows and Doors, I'm confident Marvin can meet criteria for any job and work with architects and owners to meet special design criteria. We know we can rely on the quality, performance and aesthetics of their products. The Magnum series has successfully met unusually high wind resistant requirements. Most importantly, our client is very pleased with the results," Swofford added.

Light-filled Small Scaled Addition Saves Energy Costs

Starting the day in a cozy light-filled breakfast nook overlooking the woods is just what architect Michael Crosbie, an Associate with Steven Winter Associates, Inc, in Norwalk, Connecticut, had in mind when he designed an addition on the north facing side of his 1938 vintage home. He wanted the new windows to match the existing "six over one" windows on the rest of the house. Crosbie achieved these aesthetic goals and more, with Marvin Windows and Doors.

Crosbie chose Marvin because of the high quality they provide, the custom capabilities and selection available to meet project needs. Specifically, the Simulated Divided Lites – the muntin bars separating panes of glass in a window sash - attached to the window gave the appearance of a true divided lite, while providing the advantage of double paned glass and energy efficiency.

"I wanted the small scaled addition to appear like it had always been part of the house, and Marvin worked out all the details just perfectly. They ganged three windows together in one assembly for easier installation, but the windows look like three separate units. The contractor installed the windows in less than a day. The product versatility is endless; Marvin will do anything you want," said Crosbie.

Inside, the simple, tastefully detailed addition overlooks a naturally landscaped area, and includes built-in bench seating below the windows. "We rarely turn the lights on, because there is so much natural light entering the space, even with a northern exposure. As a result, we've saved on electricity and energy use. Marvin was the most economical choice available on the market that gave me exactly what I wanted: aesthetics, maximum natural light, energy efficiency, double glazed units and ease of installation," Crosbie added.

Barbara A. Nadel, FAIA is principal of Barbara Nadel Architect, in New York City, specializing in programming, planning and design of institutional facilities. She is 2001 National Vice President of the American Institute of Architects and frequently writes about design and technology.

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CIRCLE 13 ON INQUIRY CARD

Letters

Talkback

In response to "A Critical Moment" [Editorial, JULY 2001, page 19], I agree that the public does in fact need more well-explained and well-thought-out information about our built environment. While printed media, especially newspapers, are a first step, they can not succeed in a vacuum. Criticism, by its nature, is meant to express a given opinion. Too often, individuals take at face value what they have read (or seen on TV, or heard by word-of-mouth), without any critical thought of their own.

I only see this trend getting worse in our culture, which is ever more demanding of immediate gratification. Critics must be cognizant of this. Their role is huge—they must not only share opinion but get people excited enough to want to pursue more information, and ultimately begin to look up and notice what's around them. More of this is needed in the architectural realm—as evidenced by the lack of coverage in many major newspapers, as was noted in your editorial.

Once people are interested, they must be able to find the information easily. Living in Chicago, I find that resources are easily accessible. I'm not sure about other metropolitan areas, but I would venture to guess that resources are lacking in suburban and rural areas. As Herbert Muschamp said so eloquently last fall in Chicago: The bad thing about architecture is that even stupid people get to have an opinion about it. I hope the architecture community's efforts to inform and educate the public will grow as public interest grows, as it seems to be doing.

—Koren Ganas
OWP&P Architects
Chicago

Campbell's soup

Robert Campbell's critique of avant-garde architecture [JUNE 2001, page 75] was a refreshing antidote to the fashion victim syndrome that too often afflicts the world of architectural journalism. However, I think he was too eager to have it both ways and too quick to let himself off the hook by taking refuge in the notion of a "visible timeline" by which "we can walk through the built world, read buildings by their style, and so date them." By falling back on the familiar bromide that architecture must reflect its time and place, Mr. Campbell reinforces the specious theoretical underpinnings of the addiction to novelty he decries.

Contrary to what unsuspecting first-year architecture students are taught as an eternal truth, the notion that architecture must reflect its time and place is relatively new. It derives from the discipline of art and architectural history, which, in the 19th century, attempted to move beyond purely aesthetic issues and into the realm of art and architecture's relationship to political, economic, and cultural context. Hence, the indisputable observation that architecture tends to reflect its time and place.

This idea was very attractive to late-19th-century architectural critics, who were railing against the eclectic revival styles of their day. In their minds, it was a short and inevitable leap from the historian's observation that architecture does reflect its time and place to the critic's dictum that architecture must reflect its time and place. Thus began the quest for architecture that aspired not to timeless norms of beauty and utility but to the self-conscious expression of the zeitgeist. Add to these circumstances the late-19th-century proliferation of architectural publications with a monthly need for new material and it's not hard to see the source of our current obsession with novelty.

I applaud Mr. Campbell's desire to lead us beyond novelty, but much of what he's railing against is now deeply rooted in our architectural culture. He's got a tough row to hoe.

—Jim Gauer
New York City

Mr. Campbell cites the Jewish Museum Berlin as an instance of architects and journalists being perhaps a little gullible in their acceptance of the new. While I welcome this call to give novelty the honor of critical attention, I have to take issue with some of what Mr. Campbell says. I am the museologist responsible for turning Daniel Libeskind's Jewish Museum building into a functioning entity, a place of scholarship and narrative. Such a responsibility sharpens the mind, particularly when one is frequently asked questions such as: Is it suitable as a museum? Should it not remain empty?

First, the spaces of the Jewish Museum Berlin are not a series of sound stages waiting obediently for academics and exhibitions designers to strut their stuff. Rather, these spaces, and their component elements, actively contribute to the telling of arguably the most fraught history of any cultural relationship the modern world has known.

This "activeness" causes people to question the building's functionality, yet it also makes this an incredibly exciting building to work with. Libeskind has imbued his building with some of the major themes of German Jewish history—cultural values under trauma, people and cultural property destroyed, and exile—alongside statements about the continuity of culture. The building has its origins in a powerful set of ideas that relate directly to the narrative being pursued in the exhibitions. Indeed, one of the great joys of this project has been to allow exhibition themes and architecture to work together.

In his critique, Mr. Campbell claims that the building "derives most of its ideas from decades-old expressionist cinema" and that it is "a perverse fun-house." Such comments do not correspond to the reality of the building that I am currently filling with exhibitions. The criticisms simply do not ring true. Libeskind's designs are not arbitrary borrowings.

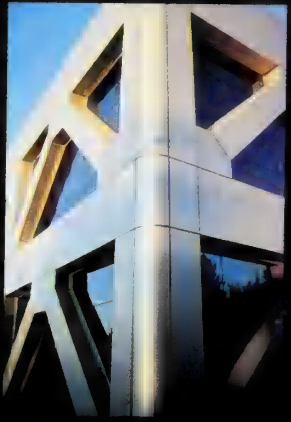
—Ken Gorbey
Project Director, Jewish Museum Berlin

Chock-full o' architecture

Your May issue was the heavyweight champion of magazines—my wife struggled to pick it up with the mail. And the text justifies the weight. A quick scan immediately revealed the fact that the Gehry virus has begun to infect the architectural profession. His disciples are eager to jump on the bandwagon of his publicity. Anthony Vidler [Critique, MAY 2001, page 71] accurately refers to these as "bloblike forms," attainable by the use of the computer. Are they art? If you dumped a pile of mud and duplicated its form in titanium with the aid of a computer, would it be creative design? These forms herald the introduction of destructive architecture. They are really not original. At the end of World War II the streets of London, Berlin, and Hamburg were strewn with such prototypes. It is ironic that, in the same issue, you are so sentimental about the Farnsworth House [Editorial, MAY 2001, page 23], a prime design created without computers.

—Leon Rosenthal, AIA
Franklin Square, N.Y.

Please e-mail letters to Robert Ivy at: rivy@mcgraw-hill.com



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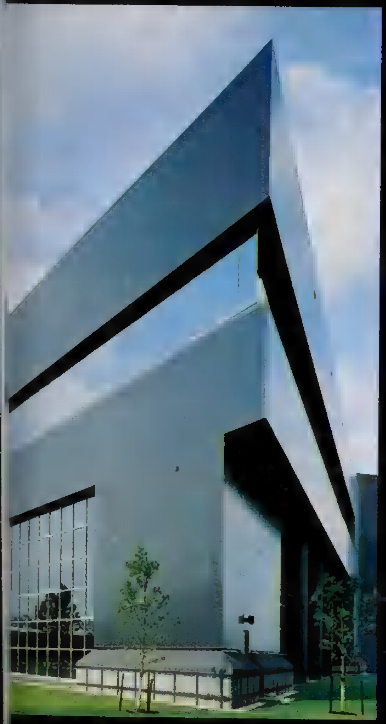

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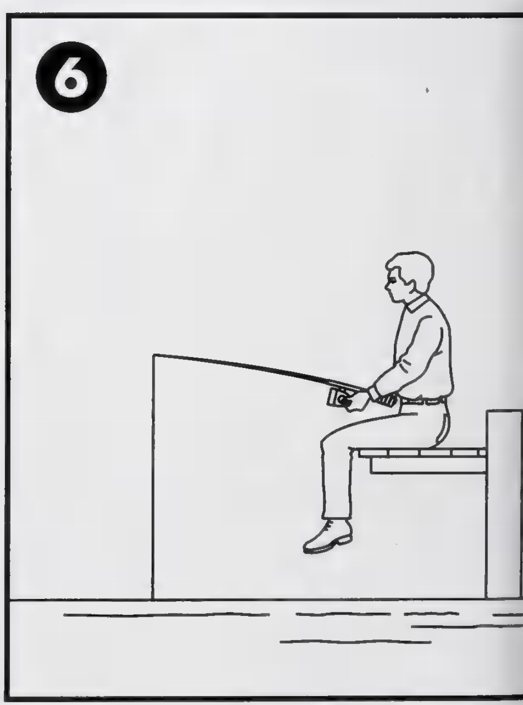

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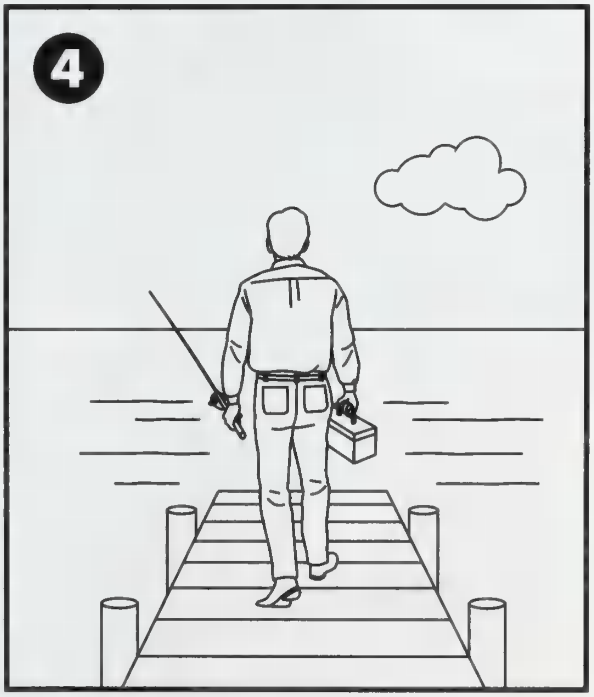

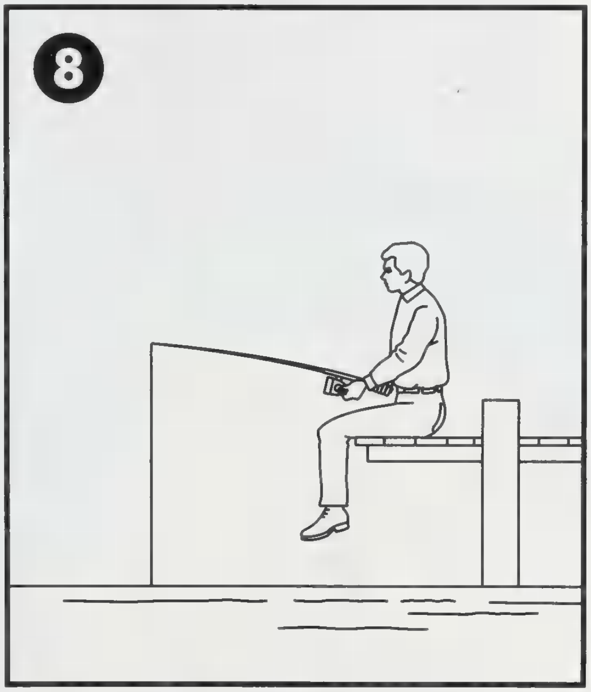

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Record News

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Richardson house in danger p. 39
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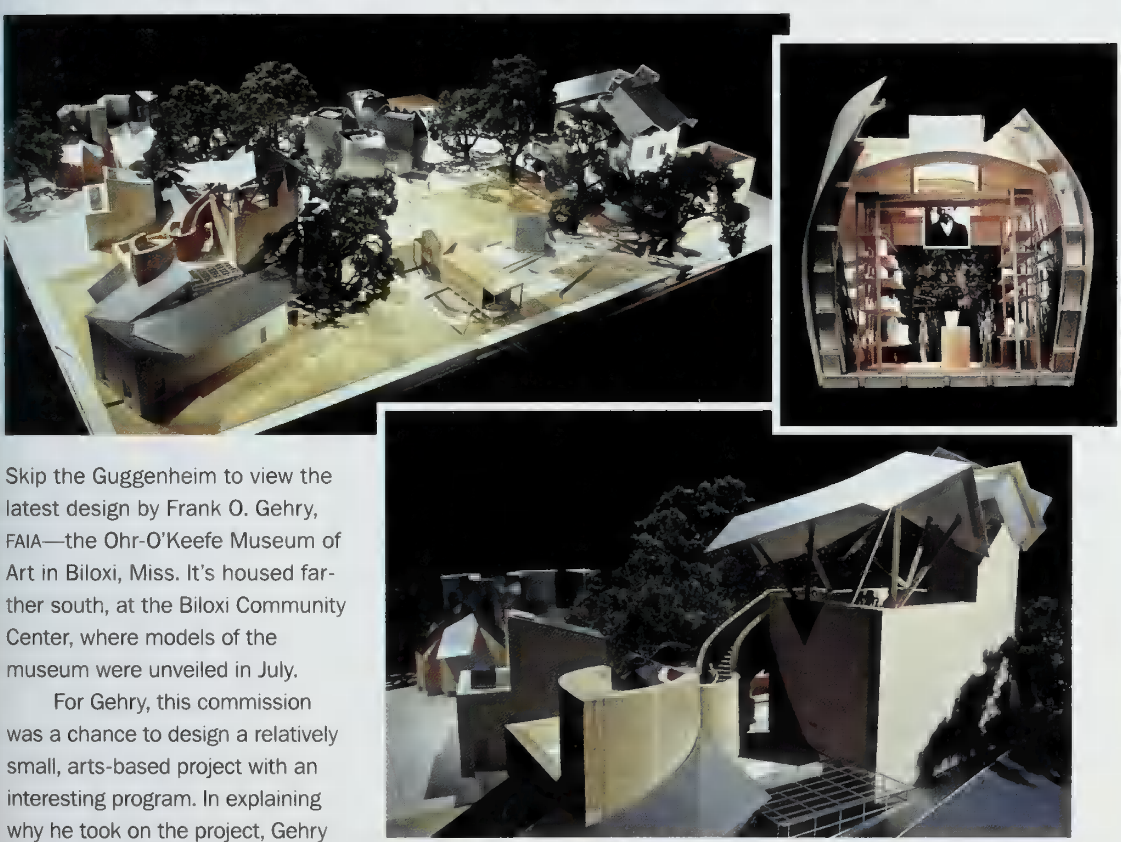
Gehry designs Biloxi "mad pot-Ohr" museum



The Ohr-O'Keefe Museum of Art (top left) will have pavilions, including the Ohr gallery (top right) and a building with a cafe and gift shop (above).

Skip the Guggenheim to view the latest design by Frank O. Gehry, FAIA—the Ohr-O'Keefe Museum of Art in Biloxi, Miss. It's housed farther south, at the Biloxi Community Center, where models of the museum were unveiled in July.

For Gehry, this commission was a chance to design a relatively small, arts-based project with an interesting program. In explaining why he took on the project, Gehry told museum supporters at the unveiling it was the "challenge of doing something small and taking it to the moon."

The $16 million Ohr-O'Keefe Museum of Art will be built as a series of six varied buildings placed between a number of large live-oak trees on a four-acre site, a part of Tricentennial Park, overlooking the Gulf of Mexico. Gehry admits that, unlike his signature buildings with wildly undulating forms, this project is somewhat restrained. The centerpiece of the museum campus is a four-pavilion gallery to feature the ceramics work of George E. Ohr (1857–1918), known as the Mad Potter of Biloxi.

Ohr, who created thousands of pieces of pottery at the turn of the 20th century, is best known for his pieces called "mud babies," with incredibly thin, pinched, crimped, fluted, and manipulated walls. Considered eccentric and garnering little enthusiasm for his work in his lifetime, Ohr sported a two-foot mustache and proclaimed himself the "unequaled, unrivaled, undisputed, greatest art pot-Ohr on earth." After his death, his mud babies sat in storage for nearly 50 years before being discovered and highly coveted in the past 30 years. Many New York artists, from Jasper Johns to Andy Warhol, became collectors of Ohr's expressive work.

Besides the Ohr gallery, the museum will include galleries for African-American art and works by local contemporary artists; a building with a cafe and gift shop; and an education building with ceramics studios, conservation laboratory, and a pottery research library. The Pleasant Reed House, a 19th-century historic house, will be moved to the site and restored as an African-American interpretive center.

Buildings on the campus will be clad in a range of materials, including stainless steel, brick, and white plaster. Gehry Partners is working with Guild Hardy Associates of Gulfport, Miss., on the project. Groundbreaking is expected in 2002, with an opening in late 2004. *John E. Czarnecki, Assoc. AIA*

SUITE HOME CHICAGO

Part Situationiste, part Futurist, and all kitsch, Chicago's summer public art exhibit, *Suite Home Chicago,* **plops oversized, living room–like arrangements of fiberglass furniture along the city's sidewalks and plazas. Tourists and office workers alike can lounge while buses and cars zoom by, and voyeurs may observe spontaneous reenactments of "the everyday" in the homelike habitats. These tourist attractions also provide a springboard for the city, which may add more urban furniture around town. A different sponsor funded each suite, and artists rendered the furniture, so each arrangement is unique. Some are three-dimensional billboards for their sponsors, while others feature furniture decorated with a pattern. Michigan Avenue hosts one-third of the exhibit's initial 180 arrangements, each comprising one to four pieces of furniture. The city will add approximately 150 more pieces before they're packed up on October 13.**
Rosemarie Buchanan

OFF THE RECORD

The Bush administration has named F. Joseph Moravec commissioner of public buildings for the General Services Administration, replacing Robert A. Peck. Moravec was senior adviser for business development at George Washington University.

The shortlist in the competition for a new $110 million main library in Minneapolis includes: Gwathmey Siegel & Associates with [illegible]; [illegible] & Associates; [illegible] Architects; RSP Architects with Hardy Holzman Pfeiffer Associates; [illegible] Meyer, Scherer & Rockcastle; [illegible] Architects with Hammel, Green & Abrahamson; and [illegible] & Rowe Architects.

Frederick Steiner has been named dean at the University of Texas at Austin School of Architecture, replacing Lawrence Speck. Steiner was formerly professor and director of the Arizona State University School of Planning and Landscape Architecture.

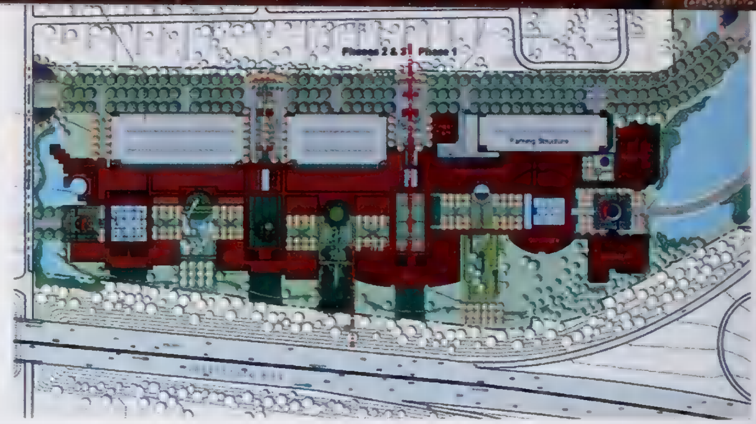
Michael Graves & Associates, Hardy Holzman Pfeiffer Associates, Robert A.M. Stern Architects, and Vitetta with Schmidt, Hammer Lassen of Denmark are in a competition for a $95 million main library in Jacksonville, Fla. A winner will be chosen this fall.

Maya Lin has been selected in a competition for the design and renovation of the new SculptureCenter in Long Island City, Queens, N.Y. The shortlist included Deborah Berke, Diller + Scofidio, and Weisz + Yoes.

Diller + Scofidio, Leeser Architecture, and MVRDV are shortlisted in the competition for a new $60 million museum of art and technology for Eyebeam Atelier in New York.

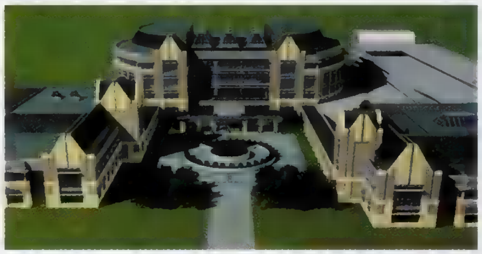
Randall Stout Architects has been selected to design the UC–Riverside Alumni and Visitors Center.

Medtronic campus first phase complete



The Medtronic campus will include about 1 million square feet of space, with an emphasis on research and education, to be built in three phases.

The first things to see upon entering the new Medtronic corporate campus in north suburban Minneapolis is what Bill George, CEO of Medtronic, believes to be the heart and soul of this rapidly growing company: the research and education facilities. That's why Medtronic asked Minneapolis-based Hammel, Green and Abrahamson (HGA) to design a corporate campus that emphasizes the "campus" over the "corporate."



Construction has begun on the 1-million-square-foot, three-phase campus, on the site of a former drive-in movie theater. The 540,000-square-foot first phase was completed this summer. Phases two and three will be built in five-year intervals.

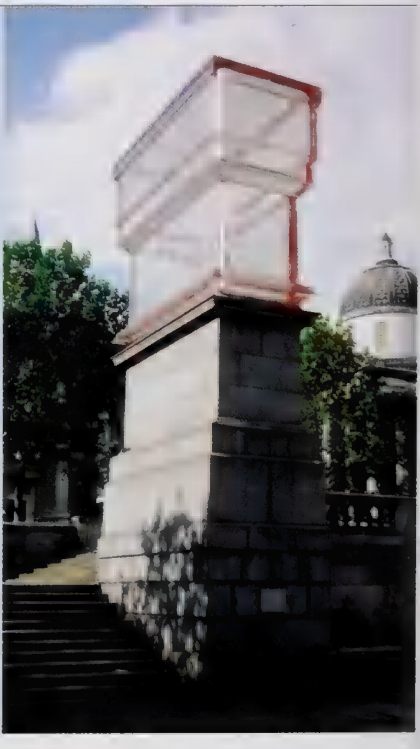
Medtronic, a pioneer in the field of cardiac pacemaker technology, has expanded its business scope into the areas of vascular, neurological, and spinal treatment devices. A large part of Medtronic's mission involves educating doctors and technicians worldwide about its research and products. As a result, the first phase includes classrooms and state-of-the-art research labs.

Utilizing an updated version of "Collegiate Gothic" architecture, the architects have designed a linear group of buildings to be built around a series of exterior courtyards. A circular, four-story corporate office is between and just behind the research and education buildings, at a formal entry court. Also in this first phase are a day-care facility, support services, and a 54,000-square-foot building for the company's rapidly growing neurological, spinal, and ENT surgery division. Exterior building materials include native Minnesota stone with brick.

Working with landscape master planners Oslund and Associates of Minneapolis, HGA and Medtronic wanted to emphasize "stewardship of the land," says Bill Blanski, AIA, senior project designer at HGA. Three courtyards will have themes: prairie grasses, pine forest, and hardwood forest. *Bob Dillon*

Whiteread's Untitled in Trafalgar

British sculptor Rachel Whiteread's much anticipated Untitled Monument was unveiled in Trafalgar Square in London on June 4. The striking sculpture, cast in resin, took eight months longer than expected and required an extra four tons of resin. An inverted mirror image of the 14-foot-tall granite plinth on which it stands, Untitled Monument pays homage to the plinth by echoing its profile and drawing attention to its elegant form. Built in 1841, the plinth was originally intended as the site for a statue of William IV, but lack of funds prevented its realization. Whiteread's sculpture is the third and last in a series of site-specific projects commissioned for the plinth. The artworks were the brainchild of Prue Leith, then chairman of the Royal Society for the Encouragement of Arts, Manufactures and Commerce, who wanted to raise awareness of contemporary art. Untitled Monument is an unassuming sculpture that comes alive with the changes in light, which are atmospherically reflected through the resin, accented by the occasional streak of red when a bus drives past. Its translucency is a poignant reminder of its history as an empty plinth and testimony of Whiteread's desire to create "a pause…a quiet moment" in one of London's busiest areas. ***Zoë Ryan***



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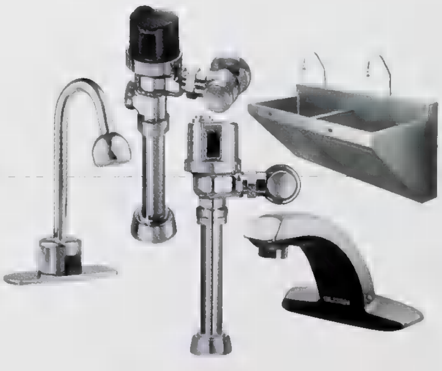

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CIRCLE 18 ON INQUIRY CARD

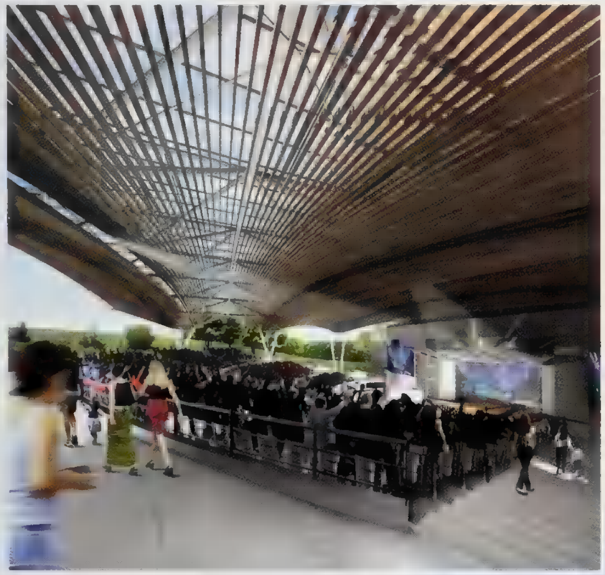
Peace, love, and Meier: Pavilion designed for Woodstock site

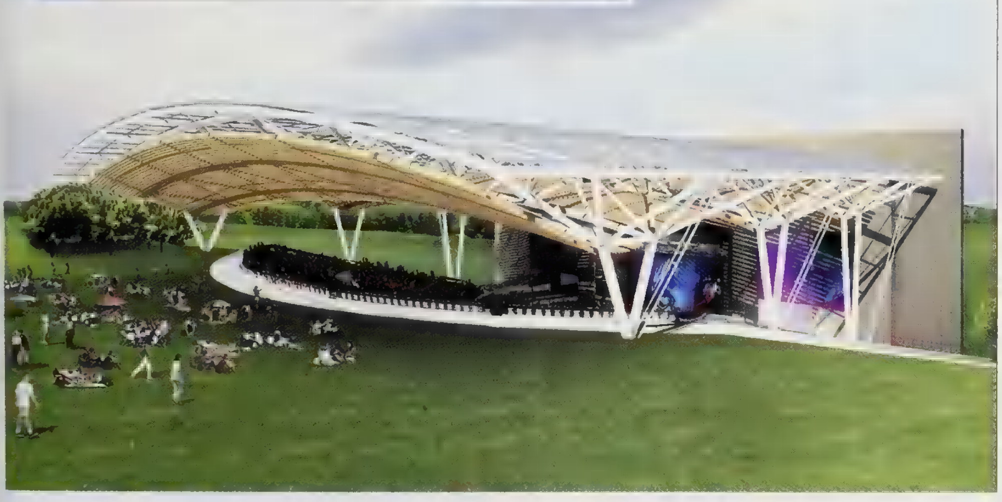
Architect Richard Meier, FAIA, and billionaire Alan Gerry were not among the 400,000-some people who gathered for the Woodstock music festival near Bethel, N.Y., in August 1969. Gerry, 46 at the time and living nearby in Liberty, N.Y., advised his teenage children not to attend, though one daughter went anyway. Now, Meier and Gerry are creating a performing arts center to celebrate that generation-defining event.

Gerry has lived in Sullivan County all his life. He built a television antenna business into a large cable television company and spun off the Gerry Foundation to develop a music and cultural center at the Woodstock site—something similar to Tanglewood in the Berkshires of Massachusetts—to help the area's faltering economy. By most accounts, the county at the heart of the once-thriving Catskills tourist haven is ready for the infusion of visitors. New York State has committed to kick in $15 million of the pavilion's $40 million price tag.

Ultimately, the foundation plans to build a 1,000-seat performance hall, a festival stage on the site of the original stage, a museum, a performing arts school, a 300-room hotel, a visitors' center, and retail and dining facilities. The museum, called Music Experience, will have exhibitions focusing on the 1969 event and the history of American music.

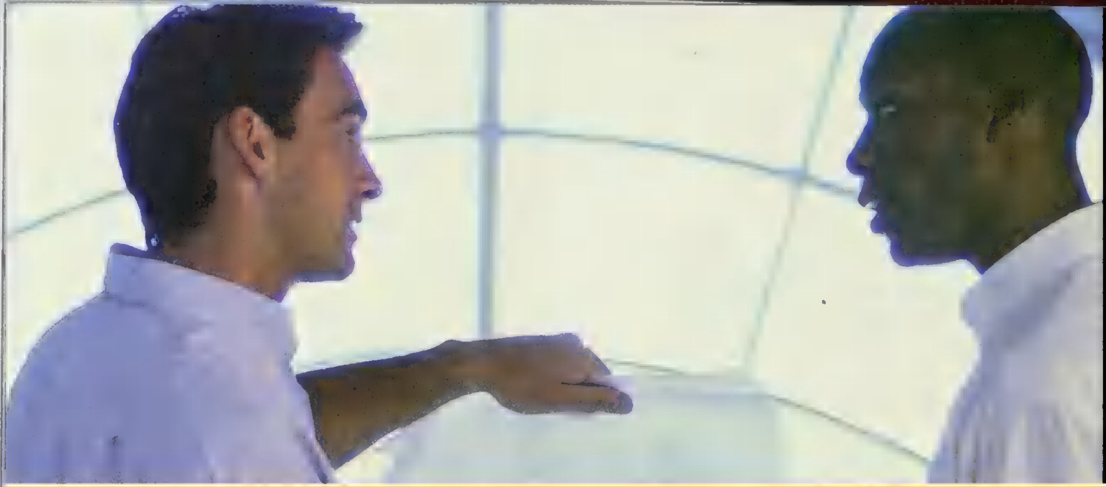
The center's first component has been designed by Richard Meier & Partners to live lightly on the site. The cloudlike music pavilion, which includes 3,500 seats under cover, and lawn seating for 14,000, will open in 2004. Meier's trademark whiteness comes to this project in the form of a curved, weblike canopy of white steel and glass that seems to hover over the field. The roof is fastened to the hillside by thin V-columns at six points. The roof is intended to be highly transparent during the day and a glowing hood at night. The underside of the roof will be covered in wood louvers that will let in daylight from above, expose the structural elements, and shield the lighting and other performance equipment from view. Meier has called it his "most flowing and free-form building." *Kira L. Gould*





The Woodstock pavilion, with wood louvers on the underside, will be supported by thin V-columns.

PHOTOGRAPHY: COURTESY RICHARD MEIER & PARTNERS



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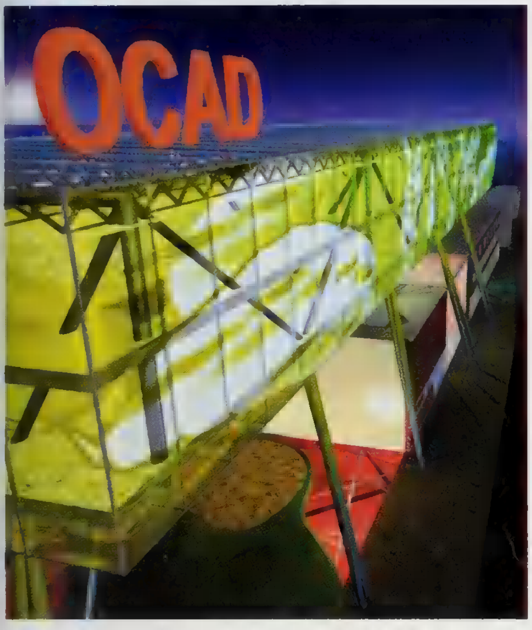


Alsop's first North American building hovers above school

With Will Alsop's first building in North America, the London-based architect will be making quite a statement. Alsop Architects, in a joint venture with Toronto's Robbie Young + Wright Architects, has designed the $25 million Sharp Centre for Design and renovation of the existing Ontario College of Art & Design (OCAD) building in downtown Toronto.

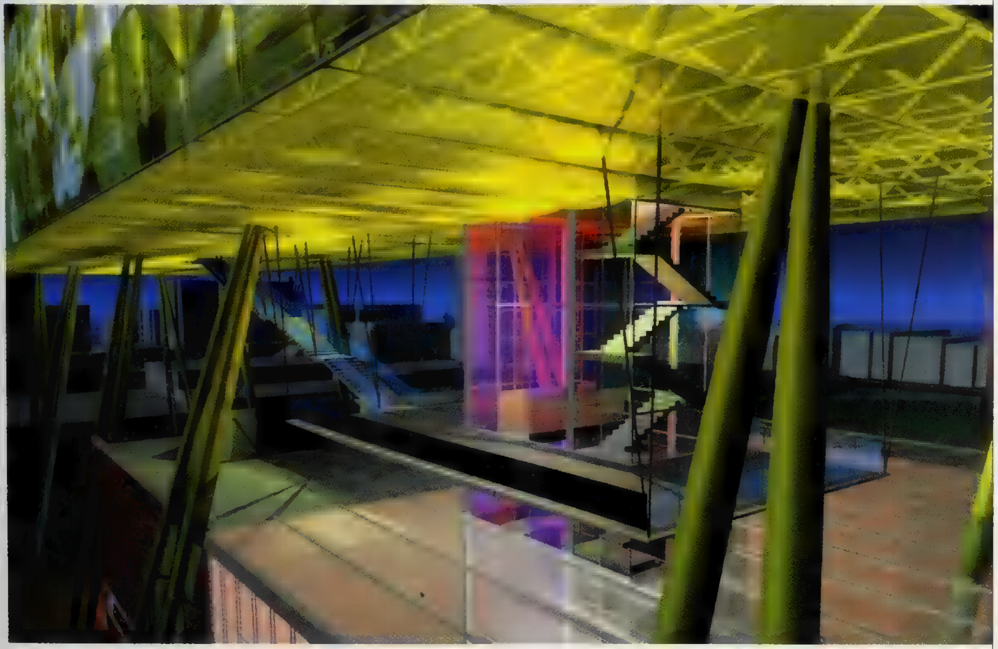
The steel-and-glass building looks like a rectilinear spaceship that landed over the top of the existing design school. "Visually vibrant" was the understated way Gregory Woods, project architect with Robbie Young + Wright Architects, described the unusual tabletop-like structure that will straddle the existing OCAD campus. Construction is scheduled to begin by the end of this year and be completed in 2004.

The 50,000-square-foot Sharp Centre facility, about 75 feet wide and 300 feet long, will include classrooms, studios, an auditorium, and meeting space. It will relieve pressure on the cramped, existing OCAD space that has been cobbled together since the original building opened in 1913. The $25 million project cost includes technology and equipment enhancements for the school.

Supported by columns that will bracket or penetrate the existing building, the Sharp Centre will be accessed by glass-enclosed elevators and stairways through a reconfigured main entrance.

The underside of the new building will be about seven stories above street level, and about three stories above the roofline of the existing building. "That gap is just as important as the structure," Wood says, "because our master plan includes organic shapes to be suspended from the bottom of the new center as a foil to the rectilinear geometry of the table."

While the functions of these amorphous shapes has not been determined yet, Woods says they could possibly be classrooms. *Al Warson*



The Sharp Centre for Design will be built on columns above an existing OCAD building.

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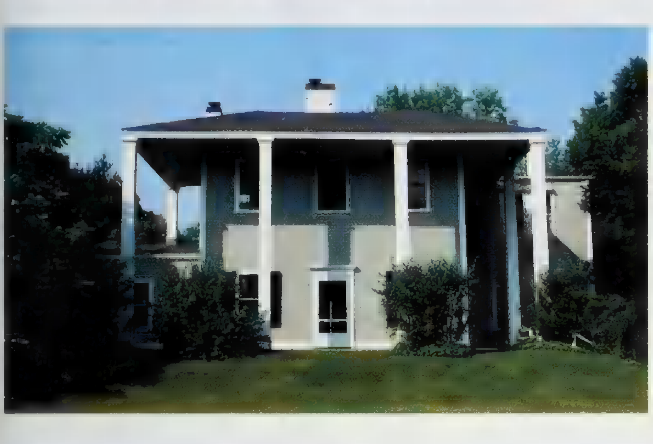
Future uncertain for H.H. Richardson's last home



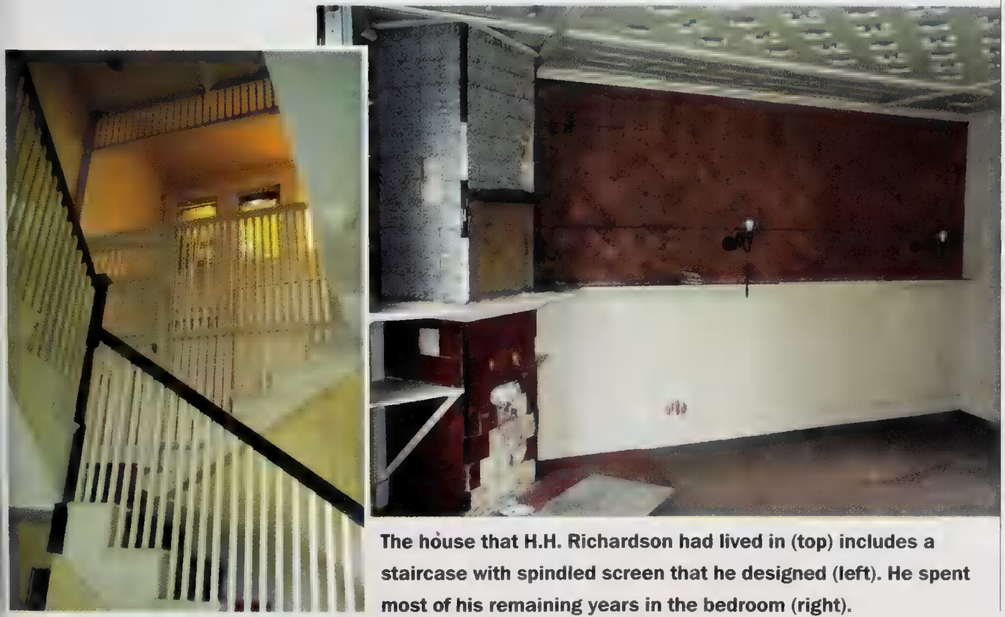
After one and a half years on the market with no buyer coming forward, the Brookline, Mass., home in which H. H. Richardson lived and worked during the last dozen years of his life is in danger of being lost forever.

Richardson rented the Cottage Street house in 1874, shortly after winning the competition for Trinity Church. He practiced first out of its east parlor, later building a wing of offices. While these "coops" were demolished around 1890, Richardson's other modifications remain intact, including a stained-glass window by John La Farge (who collaborated on Trinity's interiors) and a staircase Richardson added with a spindled screen and woven gate.

The stair leads to the most poignant reminder of Richardson's presence—the bedroom he designed for himself, where he died in 1886 after struggling with Bright's disease. The room is an unusual space of vivid architectural play. It also portrays Richardson's continuing passion for his work, despite being bedridden for months at a time. Richardson used the three hooks in the ceiling above his bed to lift himself upright. The herringbone cork walls doubled as pinup surfaces for designs produced downstairs.

Although rich in history, the property's future is uncertain. After passing to Richardson's son and grandson, the house was purchased jointly by two flanking neighbors in January 2000. They hoped to prevent it from being sold to someone who would tear it down. These new owners worked with the Society for the Preservation of New England Antiquities to create covenants that would safeguard the house. But the covenants will only take effect if the right buyer can be found—someone who can afford the asking price of more than $1.5 million, and who has energy enough for the restoration.

The current owners cannot hold the house indefinitely, and in Brookline's wealthy market it would sell quickly as a tear-down. Today, the building is one of seven on the Brookline Preservation Commission's endangered list. Hope still hinges on finding a buyer soon, so that, in the words of David England, chair of the commission, this "strange, weird, and wonderful place" can be saved. *Mark Pasnik*

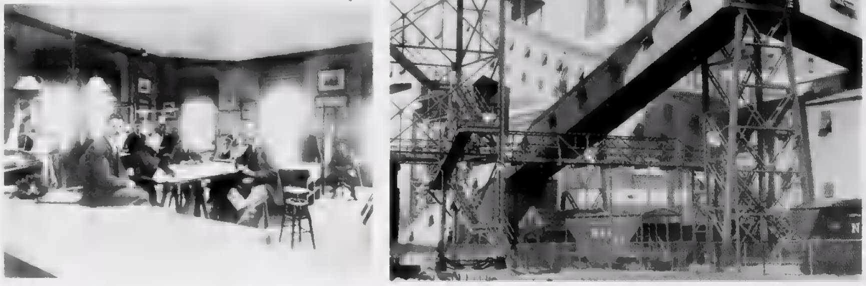


The house that H.H. Richardson had lived in (top) includes a staircase with spindled screen that he designed (left). He spent most of his remaining years in the bedroom (right).

PHOTOGRAPHY: © MARK PASNIK

CIRCLE 20 ON INQUIRY CARD

Michigan exhibit shows how Albert Kahn's industrial beauty influenced Modernism



The work of Albert Kahn (left photo, seated on table in 1880s) inspired the photography of Charles Sheeler, as in his 1927 photograph *Criss-crossed Conveyers* (right).

Devotees of the Machine Age aesthetic will enjoy *Albert Kahn: Inspiration for the Modern,* an exhibit at the University of Michigan's Museum of Art through October 21. The exhibit, which pairs Kahn's sketches and drawings with artwork inspired by his flagship factories for Ford (the exhibit sponsor), illustrates how his work helped give rise to the forms, styles, and themes explored in early Modernism.

A self-taught architect, the German-born Kahn (1869–1942) immigrated to America in 1880 and learned the craft at a Detroit firm before opening his own practice in 1896. His multidisciplinary studio brought together architects and engineers to design projects of many sizes and scales, but he's best known for Highland Park and the River Rouge complex—the massive, light-filled Ford plants that pioneered the use of the assembly line. In Kahn's hands, gloomy industrial architecture became elegant, airy structures that were just as technologically innovative as the cars built within them.

The nascent art of photography and the burgeoning field of advertising allowed Kahn's work for Ford to be captured in an entirely new way and conveyed to global audiences, where it came to symbolize American optimism, productivity, efficiency, and progress. European artists and architects traveled to Detroit to see the iconic factories, and Le Corbusier used photographs of them in his groundbreaking text, *Towards a New Architecture*. American artist Charles Sheeler, who was commissioned to paint River Rouge in the 1930s, drew on its imagery throughout his career. Mexican muralist Diego Rivera first sketched sweeping scenes in charcoal from within the River Rouge complex, which he later used as the basis for *Detroit Industry,* the mural he painted in 1933 for the Detroit Institute of Arts. The artworks on display underscore the breadth of Kahn's reach and the depth of his influence.

With the upcoming River Rouge renovation thrusting the work of Kahn back into the public eye, this exhibit is well timed. The beauty of form following function, demonstrated in Kahn's architecture for the Machine Age, remains an inspiration for designers. *Deborah Snoonian, P.E.*

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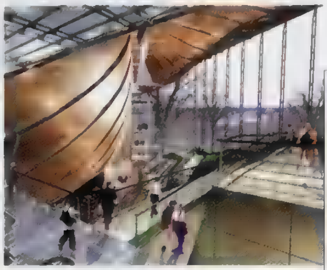
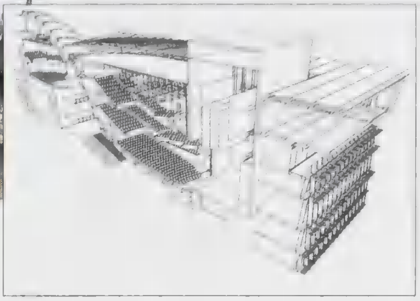
News Briefs

Austin City Hall by Predock moves forward Design has been approved for the $38 million Austin City Hall by Antoine Predock Architect of Albuquerque in association with Cotera, Kolar, Negrete & Reed Architects of Austin, Tex. The masses of the 118,000-square-foot building, to be completed in fall 2003, are intentionally angled away from adjacent streets with several small plazas around the perimeter. Primary materials are limestone, bronze, and glass, with a scrimlike bronze skin enveloping the upper levels. According to Predock's design, terraces will be positioned to form analogous relationships to geological forces in the hill country surrounding Austin. Inside, catwalk-like bridges will intersect a four-story lobby with a bronze ceiling.

Austin City Hall, to open in 2003, will include a scrimlike bronze skin.

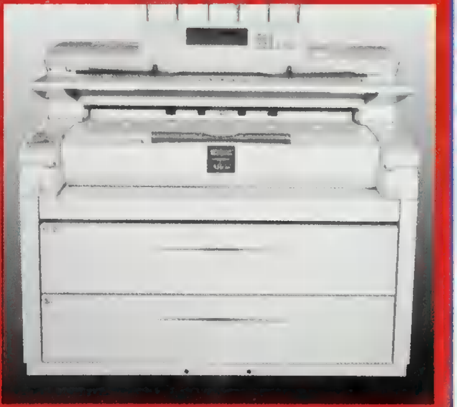
L.A. City Hall reopens after renovation and retrofit Los Angeles City Hall formally reopened in early July after a $300 million renovation and seismic retrofit. The building, built in 1928, suffered serious damage in the 1994 Northridge earthquake and is now able to survive a 6.8-magnitude quake. In the retrofit, 526 isolators or sliders and 70 viscous dampers were installed. The Los Angeles firm AC Martin Partners was the architecture and engineering principal for the seismic project. Levin and Associates Architects and Kaplan Chen Kaplan Architects and Planners worked on the historic renovation, which restored major interior spaces.





Grimshaw's Rensselaer center includes atrium and performance spaces.

Grimshaw wins competition for Rensselaer art and media center London-based Nicholas Grimshaw & Partners has won a competition for a $50 million electronic media and performing arts center at Rensselaer Polytechnic Institute in Troy, N.Y. The 160,000-square-foot building, to open in fall 2003, will have five performance venues, including a 1,200-seat theater, a 400-seat recital hall, galleries for electronic and traditional visual arts, and studios. Grimshaw was selected in a competition with Davis Brody Bond, Thomas Leeser, Morphosis Architects, and Bernard Tschumi Architects. Built on a bluff, the building will feature a glass atrium overlooking the Hudson River. Grimshaw envisions the building as a "floating wafer" that extends the Rensselaer campus westward.



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Dates & Events

New & Upcoming Exhibitions

Skin and Soul: Third International Design for Architecture Exhibition and Symposium
Jyväskylä, Finland
August 10—11: Symposium
August 11—September 9: Exhibition

Considers the relationship between surface, content, and materiality in architecture, design, and art. Symposium (in English) at the City Theatre and exhibition at the Alvar Aalto Museum of Art. Contact marjo.holma@alvaraalto.fi or see www.alvaraalto.fi/des4arch/skinandsoul.

Glass of the Avant-Garde: From the Vienna Secession to Bauhaus
New York City
August 21, 2001–January 6, 2002

Exhibits the collection of 19th- and early-20th-century Eastern European glass from the Museo Nacional de Artes Decorativas in Madrid. At the Cooper-Hewitt, National Design Museum. Contact 212/849-8400 or see www.si.edu/ndm.

Flushed with Pride
Stoke-on-Trent, England
August

In tribute to that indispensable piece of ceramics: the toilet. Examines the history of sanitation, including the development of bathroom tiles and sinks. At the Gladstone Pottery Museum. Contact 44/1782 319232 or see www.stoke.gov.uk/gladstone.

The Democratic Monument in America 1900–2000
New York City
September 5—October 3

Explores the complex and often conflicting beliefs that surround the issue of building monuments in America. Organized by the Harvard Design School in collaboration with Parsons School of Design. At the Aronson Gallery at Parsons School of Design. Contact 212/229-8987.

The Architecture of the American Craft Museum—An Exhibition
New York City
September 14—January 13

An installation of a model of the newly designed building by architects Tod Williams/Billie Tsien and a photo essay documenting the construction process, from groundbreaking to near completion of the museum's new site at 45 West 53 Street. Contact 212/977.7170 or see www.folkartmuseum.org.

Alternative Architecture: The Work of Allan Wexler
Buffalo
September 15—October 27

Exhibits the work of this unconventional artist/architect whose designs explore the relationship between the applied arts and fine arts through highly unusual, small-scale works of architecture. Other artists will be included in the show, as well. At Hallwalls Contemporary Art Center. Accompanying lecture by Wexler to take place on September 15, at the Albright-Knox Gallery. Contact lamarche@buffalo.edu.

Ongoing Exhibitions

Frank Gehry, Architect
New York City
Through August 26

Exhibits work from the 40-year career of the architect and his firm, Frank O. Gehry & Associates. At the Solomon R. Guggenheim Museum. Contact 212/423-3500 or see www.guggenheim.org.

Landscapes of Retrospection
Still Rooms & Excavations
Pittsburgh
June 9–September 2

Landscapes of Retrospection shows how British 18th- and 19th-century architecture was recorded in watercolors and drawings. *Still Rooms & Excavations* documents the expansion of the California Palace of the Legion of Honor and the excavation of a potter's field beneath it. At the Heinz Architectural Center at the Carnegie Museum of Art. Contact 412/622-3131 or see www.cmoa.org.

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Dates & Events

Mies in Berlin
New York City
June 21–September 11
Exhibits work from the early career (1905–1938) of architect Ludwig Mies van der Rohe. Though Mies is known mostly for his American Modernist glass skyscrapers, this exhibition will focus on early influences. At the Museum of Modern Art. Contact 212/708-9400 or see www.moma.org. Exhibition complements *Mies in America*.

Mies in America
New York City
June 21–September 23
Exhibits work from the late career of the German architect Ludwig Mies van der Rohe, after he arrived in America in 1938. The Seagram Building in New York and the Farnsworth House in Illinois are the show highlights. At the Whitney Museum of Art. Contact 212/570-3600 or see www.whitney.org. Exhibition complements *Mies in Berlin* (see preceding entry).

Lectures & Symposia

Marcel Breuer: From Bauhaus to Our House
Washington, D.C.
August 23
Robert F. Gatje, FAIA, who worked with Breuer for over two decades, will deliver a lecture examining the effect of German Modernism in the United States and Breuer's relationship to other émigré architects of the same time. At the National Building Museum. Contact 202/272-2448 or see www.nbm.org.

The Future of Public Space in an Era of Privatization
Washington, D.C.
September 5
A symposium moderated by Paul Goldberger of the *New Yorker* magazine. Panelists include Nathan Glazer, Jerold Kayden, and James Todd. At the National Building Museum. Contact 202/272-2448 or see www.nbm.org.

Events & Tours

The Municipal Art Society Tours
New York City
August
As part of the continuing Discover New York series, there will be tours of Grand Central Terminal, Midtown Manhattan, Rockefeller Center, Greenwich Village, and other neighborhoods and sites. Contact 212/935-3960 or see www.mas.org.

Charleston's 25th Annual Fall Candlelight Tours of Homes and Gardens
Charleston, S.C.
September 20—October 27
Hosted by the Preservation Society of Charleston. Each tour highlights a different neighborhood. Contact 800/968-8175 or preserve@preservationsociety.org.

Conferences & Conventions

Restoration & Renovation
New Orleans
September 7–8
The only trade show and conference for the rehabilitation of building interiors, exteriors, landscapes, streetscapes, and historically inspired construction. Contact 800/982-6247 or see www.restorationandrenovation.com.

Rail-volution: Building Livable Cities with Transit
San Francisco
September 13—16
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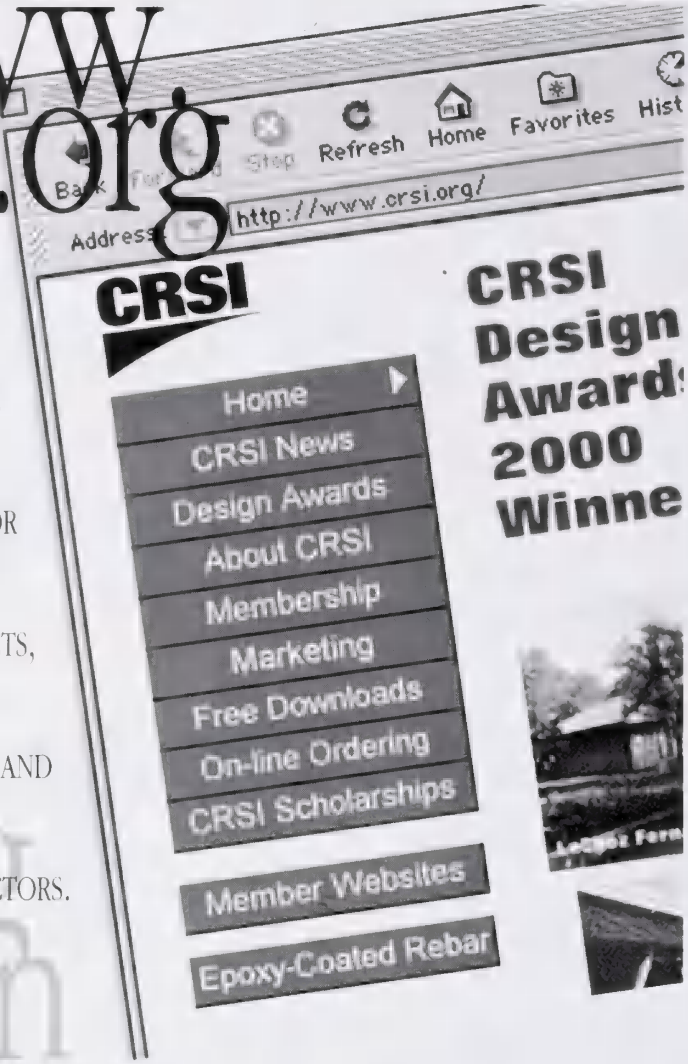

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CIRCLE 27 ON INQUIRY CARD

Dates & Events

September 22—24
Explores the benefits and challenges of implementing the many technologies that foster collaboration in the building design and construction process. Sponsored by the AIA Technology in Architectural Practice (TAP)/PIA. Contact kshertz@ aia.org or 202/626-7579.

Competitions

Construction Specifications Institute Specifications Writing Competition
Ongoing deadlines beginning August 3
Awards are available for project manuals, short-form specifications, outline specifications, preliminary project descriptions, and product binders. Contact 800/689-2900 or see www.csinet.org.

USITT Theatre Architecture Awards
Deadline: October 2
The United States Institute for Theatre Technology is hosting this competition for the best design of theaters anywhere in the world that are new constructions or renovations. Contact 800/93USITT or see www.usitt.org.

The City of Wildwood
Deadline: October 12
Soliciting designs for a new bicycle and pedestrian overpass that will serve as a connection in Wildwood, Mo., between the most populated areas and the town center. Team or individual entry. Contact 636/458-0440 or mcfinearts@ earthlink.net.

Architecture for Natural Disasters
Deadline: November 14
Seeking exemplary temporary and permanent architecture that prepares for or responds to natural disasters. Sponsored by the Takiron Company in Japan. Contact 81 3 3818 1961 or fax 81 3 3818 6742.

Jenn-Air Kitchen Competition
Deadline: December 28
The best new or remodeled kitchens that use Jenn-Air major appliances exclusively are eligible. A $10,000 cash prize and a trip to Milan are offered. Contact 612/375-8541 or vmelen@clynch.com.

E-mail your submissions for Dates and Events to ingrid_whitehead@mcgraw-hill.com

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Petersen Aluminum Corporation has added two new structural standing seam roofing profiles to their extensive line of metal roofing products. The new profiles, Tite-Loc and Tite-Loc Plus, have been designed for structural and architectural metal roofing applications and are available in a variety of materials including 22 and 24 gauge steel and aluminum. Both profiles feature factory-applied hot melt sealant to insure weather tight performance. Panels are corrective-leveled during fabrication to provide superior panel flatness. Both profiles feature our PAC-CLAD® Kynar 500 finish, available in 30 standard colors on steel and 22 standard colors on aluminum.

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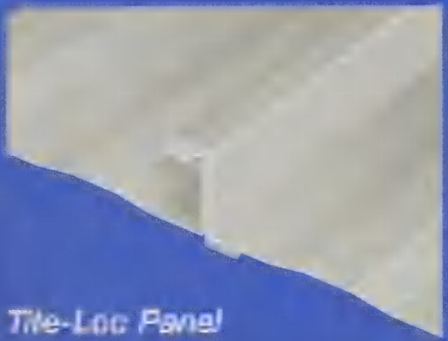

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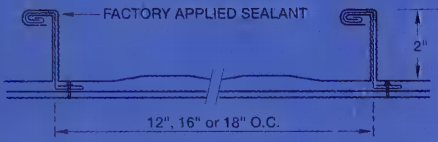

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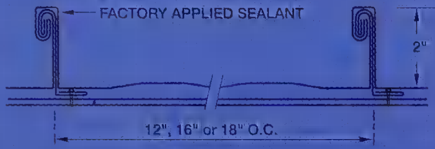

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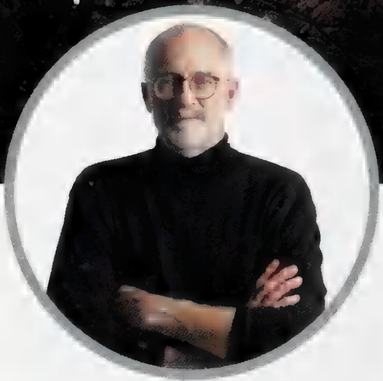

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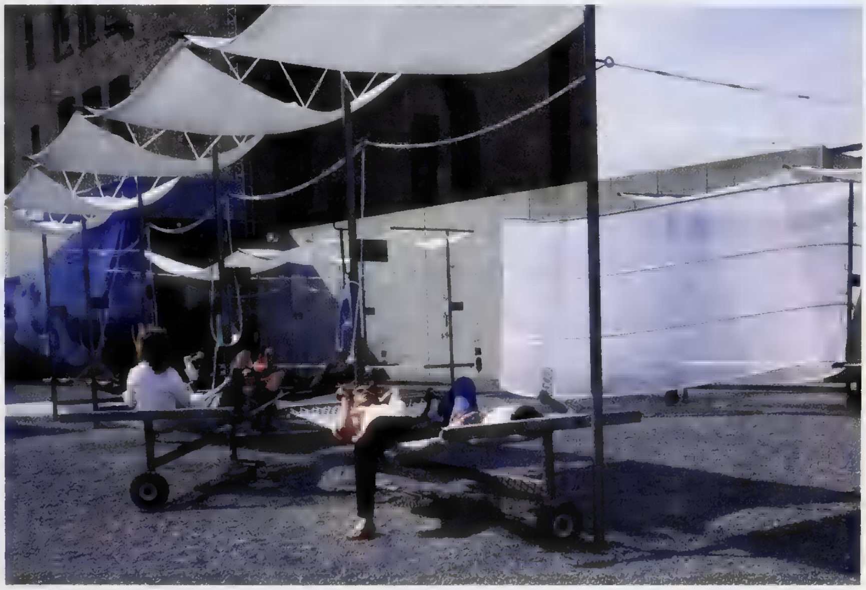
For and about the new generation of architects

archrecord2

THE EMERGING ARCHITECT

Time and luck are pertinent themes for archrecord2 this month. They constitute the well-tested methodology behind August's profile subject, Lindy Roy, at least as she sees things. Now she's developing quite a few fans—literally—with a rooftop installation at New York's P.S.1 and several other projects. For you, Design, Work, Live, and Talk are all here as always, which gets us back to that theme: Lucky you, it's time for archrecord2.



DESIGN

Lindy Roy: Exploring the possibilities

Not many young architects find a dream job and work on fabulous projects immediately out of school. Lindy Roy worked in about 18 offices in her first two years after graduating, in the 1990 recession, with an M.Arch degree from Columbia University. "It was hell, just absolute hell. It was insane," says Roy, who recently started her own small New York firm, ROY, and who has received some interesting commissions.

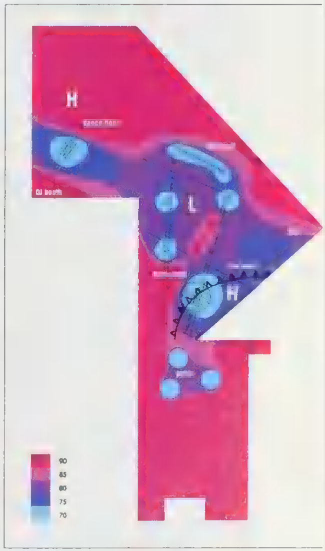
"It's been more than 10 years since I graduated and only in the last two years do I see the shape of what it is that I've been pushing for all along," Roy says. "It really takes time and luck."

Roy grew up in South Africa and earned a B.Arch from the University of Cape Town. A fourth-year internship brought her to New York. "I'd wanted to leave South Africa from when I was a teenager. Growing up under Apartheid, I was never able to come to terms with living there," says Roy. "When I came to New York, I realized this was exactly where I wanted to be."

Although she was jumping around from office to office, Roy admits she had valuable, invigorating experiences with a few of the first architects she worked for, including Frank Israel in Los Angeles and Peter Eisenman in New York. She was one of the first female project managers in Eisenman's office. "Working in Eisenman's office for two years was an extraordinary experience because it was simultaneously hair-raising and fabulous," Roy says.

Now with her own firm with a couple of full-time employees in an office in Manhattan's meatpacking district, Roy is developing a portfolio of projects ranging from a single-family house to a health spa to an arts center installation and a nightclub. A constant in all her work is an exploration of possibilities with various materials in new and expanded contexts.

That exploration paid off in Roy's competition-winning design for this



P.S.1 courtyard installation, New York, 2001

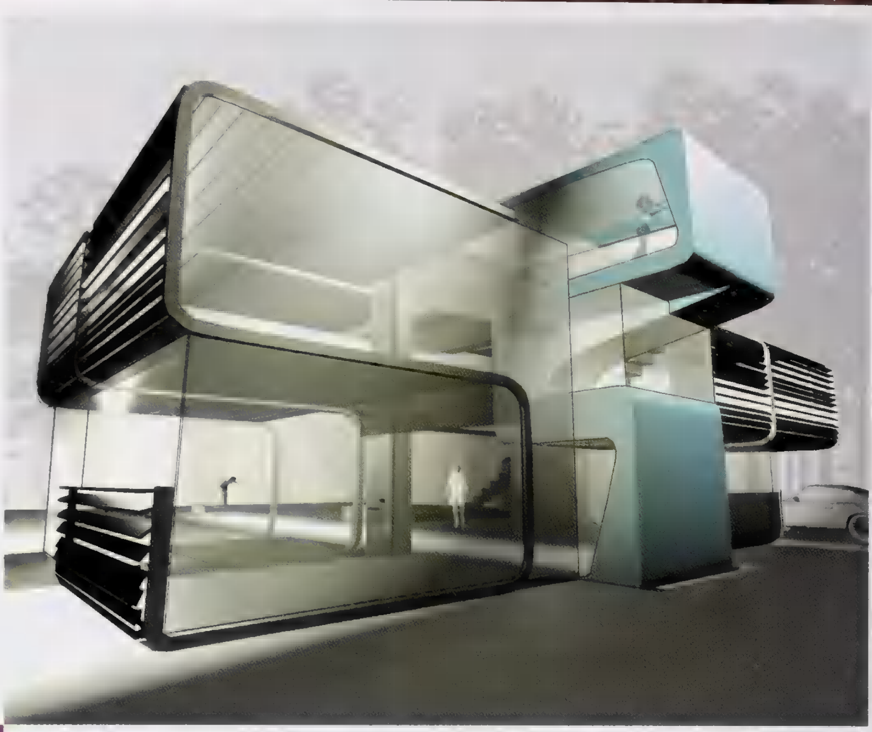
ROY designed an installation at P.S.1 Contemporary Arts Center, on display through August 31, that uses a weather map as a metaphor (right) in creating an environment with hammocks, spray misters, and fabric enclosures.

continued from previous page year's MoMA/P.S.1 Young Architect program. Materials include fabric enclosures and steel supports for hammocks in an installation called *subWave*, on view through August 31 at P.S.1 Contemporary Art Center in Long Island City, Queens, N.Y. With a metaphor of a weather map in plan (see previous page), the installation—complete with small pools, spray misters, places to lounge, and a wall of fans—is an environment for the art center's summer festival.

One of her firm's first large commissions was a spa in the safari country of Botswana (below). As with P.S.1, fabric enclosures were implemented to delineate spaces while maintaining transparency. "The spa project and P.S.1 have similar strategies of introducing elements of luxury, in spartan ways, in the environment—one being wild and one being urban," Roy says.

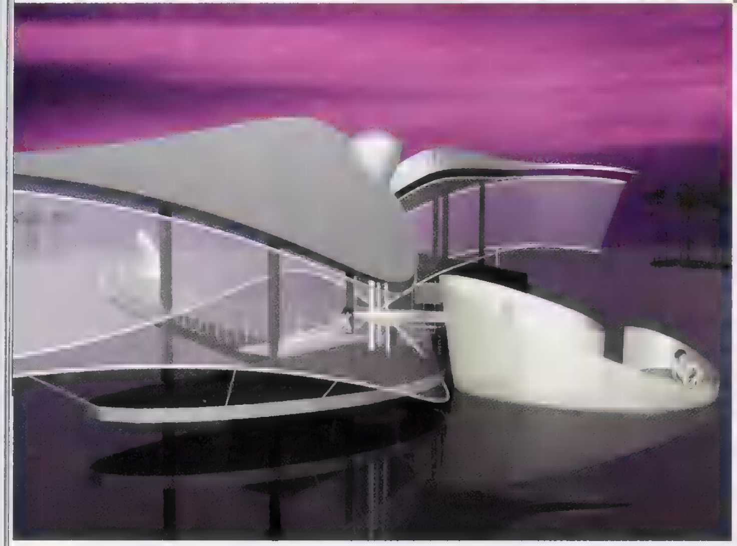
Roy is currently completing design work on a house for developer Coco Brown [APRIL 2001, page 27] for his new Hamptons development, Sagaponac. *John E. Czarnecki, Assoc. AIA*

Go to architecturalrecord.com/archrecord2 for more on Lindy Roy, and to learn how to submit your own projects.



Sagaponac House, Sagaponac, N.Y., 2001

For developer Coco Brown, Roy has designed a home in Sagaponac, Long Island, N.Y. Integrating a mosaic-tiled "water zone" with a pool and two-story water wall, the Hamptons house will be clad in dark wood. It will be built in 2002.



Okavango Delta Spa, Botswana, 1998

A high-end health spa was designed by ROY for a wetland location in Botswana. The spa, to be built next year, will have seven guest suites built on wood stilts connected by moving walkways of wood slats on fiberglass.

LIVE

Turn your back to the drawing board

It is helpful to remember, as you immerse yourself further and further in your work, that a window is more than something that you pick out of a Sweet's catalogue: It's a way to get away. And when you get to that point in the design process that is your life when you need to specify the window of your own escape, we hope that you'll choose the custom job we're creating for you in the LIVE section of archrecord2.

We've been crafting a playland full of delights for the architect at leisure: art and drawings and travel and furniture and a glimpse into the workspaces of your peers. We even have Michael Graves telling the world how he got to be a great architect from being just a little tyke. Even the early-60's photograph of him is right on, um, target.

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Go to architecturalrecord.com/archrecord2 for all of the above-mentioned goodies and for details on how to submit your own.

TALK

Connect with your peers

The six months that archrecord2 has been in existence have allowed quite an archive to build up in the TALK forum. Log on now, and you can find answers to common questions about the ARE, complain about your education, chat about your favorite architects, or let the world know why you became one yourself. New questions are added all the time, and you can always pose your own in our general questions forum. Maybe you'll help solve the world housing crisis. Or maybe you'll just find a soulmate. This month, weigh in on this new topic: If you weren't an architect, what would you be? Or, if you're trained to be an architect but aren't working as one, what is your alternative path, and why did you choose it?

Go to architecturalrecord.com/archrecord2 to throw in your two cents.

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CIRCLE 31 ON INQUIRY CARD

One building code: an idea whose time has come

Practice Matters

By David S. Collins, FAIA

Differing building codes among various jurisdictions have been a source of continuing frustration to architects. Some jurisdictions have even developed their own codes, such as the legendary New York City code, which contains requirements found nowhere else in the world. A few years ago, the Building Officials and Code Administrators, International (BOCA); the International Council of Building Officials (ICBO); and the Southern Building Code Congress International (SBCCI) joined together to form the International Code Congress (ICC), in order to create one "model" building code that everyone could follow—the *International Building Code*, or IBC. As part of the process, all three groups agreed to stop selling their own documents. The National Fire Protection Association (NFPA) chose not to join the ICC.

For 25 years, the "one-code" concept was touted by the AIA not only because it would help to make safe building design consistent from jurisdiction to jurisdiction, and to create a code that would be easier to use, but also because it was an appropriate response to diverse pressures brought on by the increasingly globalized nature of building materials manufacturing, by legislation such as the North American Free Trade Agreement, and by the Americans with Disabilities Act.

David S. Collins, FAIA, has over 25 years of experience in design issues relating to codes and code development. He is active in both the ICC and NFPA code-development processes.

Another code?

Just before the final changes to IBC 2000 were voted on in September 1999, things suddenly became more complicated when the NFPA announced that it would develop its own model building code, which would not be available to consider for adoption until late 2002. This additional code, outside the clean, one-code direction being pursued by the ICC, created a serious dilemma for jurisdictions and groups such as the AIA. Should they support adoption of the IBC or wait for the new NFPA building code?

After much study and discussion, the AIA recently moved forward with a program to support adoption of the ICC codes, which include IBC 2000 and its companion codes, because at present they most closely follow AIA's current policies and provide a better environment for safety in buildings.

At this point, the NFPA's code is an unknown entity. The NFPA also has refused to adopt a format developed by the AIA to make the new IBC much easier to use. Many of the same technical design and regulatory experts participated in the development of both codes. The nature of the physical phenomena and the human activities they regulate is identical. Both will likely establish standards that can be judged equally safe. And there is assuredly no effort to promote one kind of construction process over another. Meanwhile, the International Association of Plumbing and Mechanical Officials (IAPMO) has joined with NFPA and is producing the next editions of *Uniform Plumbing and Mechanical Codes*.

So, if the processes and the goals and criteria are so similar, why are two sets of codes being developed simultaneously, and why is each code organization trying so hard to portray its code-development process as different from and better than the other? An obvious conclusion is that the two primary organizations involved in code development are supported principally by the sale of code books and documents. The political and financial advantages to be gained for the publisher of any code that is adopted are enormous. Numerous organizations under the leadership of the AIA, as well as the Building Owners and Managers Association (BOMA), joined together in an attempt to persuade the ICC and NFPA to cooperate rather than compete in developing codes, but to no avail.

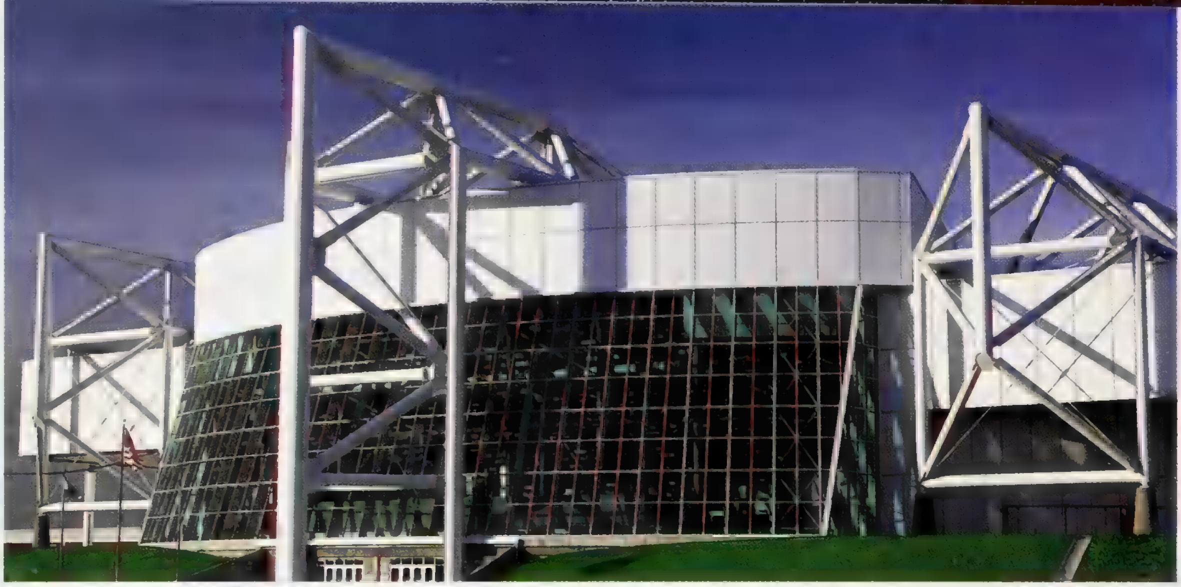
What can happen

Lately, when communities have been considering adoption of the IBC, both the ICC and NFPA have been showing up to lobby for their own codes. As a result, communities are being forced to decide whether to adopt the I-codes or delay making any change until the NFPA's as-yet-unpublished code appears. Decisions are being made, not based on whether one code addresses technical or safety issues better than the other, but rather on the basis of politics and obfuscation. Ironically, the NFPA publishes several codes and standards that are widely accepted and used as references in the IBC, for example, *NFPA-101, Code for Safety to Life from Fire in Buildings and Structures* (Life Safety Code); *NFPA-13,* which governs the design and installation of fire sprinklers; and *NFPA-70, the National Electric Code*.

The recommendation of the AIA's Task Group in December 1999 to support the ICC International Codes Series was reconfirmed in February 2001. ICC provides a single family of codes that are comprehensive, coordinated, contemporary, and that are developed following a consensus process. The NFPA and IAPMO's documents do not yet exist, so can't be tested to see if they meet these criteria.

The AIA's policy calls for the adoption of the most current and up-to-date codes. Now, AIA chapters across the United States are actively encouraging adoption of the ICC International Codes. Yet, the fire services in many communities have opposed the adoption of the more modern code, simply calling for a delay until the NFPA building code is finished, without regard to the impact delay may have on their communities. In the most extreme cases, this could have immense and unintended consequences.

How the regulatory climate in the U.S. evolves over the next three to five years may be controlled by politics or a logical examination of the merits of the codes, whose purpose, after all, is to protect the public. The furtherance of a single code does this best. ■



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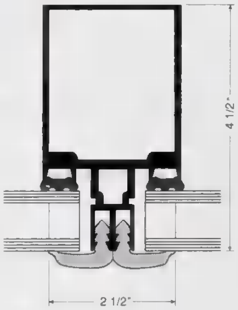

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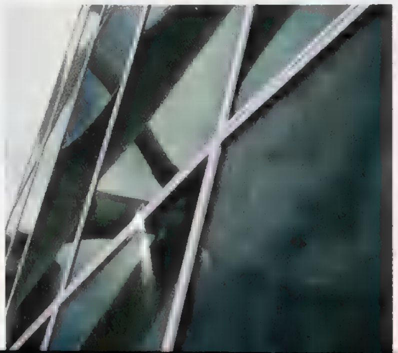

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CIRCLE 32 ON INQUIRY CARD

After 50 years, does the design world still need a conference with its head in the clouds?

Critique

By Robert Campbell, FAIA

What was great about the annual Aspen Design Conference, held in Colorado in June, was its informality. There was even a guy with the title of Anti-Facilitator (Paul Holdengraber, in real life the director of the Institute for Art and Cultures at the Los Angeles County Museum of Art). His job was to ask upsetting questions, in order to keep things from running too smoothly.

Nobody worried about the meaning of the word *design,* either. At Aspen, design is generally believed—rightly so, in this writer's opinion—to mean just about anything you want it to mean. Peter Beinart, for instance, the 30-year-old editor of the *New Republic,* kicked off the design conference with a fascinating lecture on American politics. Gadi Geiger, an MIT professor, offered an equally riveting talk on dyslexia. Dyslexia? Well, yes, it turns out there's a design aspect to dyslexia. Designers are prone to it, and when they're trained to read better—as they can be—they tend to lose some of their design skills. The audience, mostly designers, was enthralled. You have trouble reading? Hey, you must be talented.

Aspen has always been like that, a carefree outing of bright people—architects, urbanists, filmmakers, graphic and product designers—who happen to enjoy talking and listening to one another and having fun in the sun. Anyone who pays the fee is welcome, but many who come seem to know one another. The Rockies sparkled, and so did the champagne at the many parties scattered among the houses of the town.

Trouble in paradise

But beneath it all, there was trouble. This was the 50th anniversary of the conference. All living former members of the board of directors, and all living former speakers, were invited to come free, to celebrate the occasion. But they also came to ask one another whether maybe it wasn't time to fold the show. Paid attendance is down to 400, from highs of around 1,500. The design conference has shrunk from five to three days, and it has lost its coveted mid-June date, from which it was bumped by another Aspen conference on food and wine. At a recent board meeting, a motion was made that the entire board should resign. Mass suicide failed to attain a majority vote, but the suggestion left a sense of unease.

Has Aspen been around too long? Is it now about the past, not the future? Certainly, the atmosphere was sometimes poignantly retro. Jane Thompson of Boston, a board member since 1976, introduced each evening session with a stroll down memory lane, in the form of a slide show of Aspen conferences of the past. These were the kind of slides you'd show at your neighborhood block party ("Hey, there's little Jimmie, and old Mr. Bradshaw"). The images were often evocative, but the younger members of the audience didn't recognize any of the faces, and they grew restive. And in other ways the conference felt dated. The attendees, for example, were almost entirely white, which made it odd to listen to speaker Richard Rodriguez talk about "The Brown Past and the Brown Future."

Conference participants enjoyed lunch at an installation by artist Lucy Orta.

How green is your mountain?

Some other things felt wrong, too, at least to this observer. One was the town of Aspen itself, which boasts some of the nation's fiercest requirements for green architecture, but which can be accessed only by pollution-spewing and resource-consuming planes and cars. Who's fooling whom here? (Never mind the huge, hideous tourist hotel in vaguely Richardsonian style, with hunting prints on the wall, or the quaint pedestrianization of several Aspen intersections, thus funneling too much traffic onto a single overstressed collector.)

And at the conference itself, I was disappointed to attend a symposium in which several people said we don't have to worry about running out of gasoline because there are lots of oil reserves. Apparently, they haven't noticed that the burning of fossil fuels is risking the destruction of our planet. Or so say

Contributing editor Robert Campbell, FAIA, is the Pulitzer Prize–winning architecture critic of the Boston Globe. *His essays appear on this page every other month, alternating with essays by Michael Sorkin.*

virtually all members of the scientific community, not counting the ones who are paid to say something else. I have to trust the scientists because I don't have another belief system to turn to, and I suspect most designers are in the same position. Of course it's possible that the scientists are wrong. But I suggest we apply the logic of Pascal's famous essay "The Necessity of the Wager." Pascal said we should bet there's a God because if we bet there isn't one, and we're wrong, we're going to be in big trouble. By the same token, if we bet there's no planetary crisis and it turns out there really is one, we lose everything. If we bet there is a crisis, take action to deal with it, and then find out we were wrong—well, no real harm is done.

Thinking global

Anyway, those were the thoughts of one visitor to Aspen. Maybe the design conference, searching for renewal in its fabulous Rocky Mountain high site, could find it by taking the lead in thinking about the planet. Planetary survival, surely, will be the great political issue of the 21st century, and it's something designers know a lot about. It's about how we live, how we build, how we create and spend energy, and maybe most of all, how we succeed or fail at finding more compact and efficient patterns of settlement, instead of sprawling like a disease across the surface of the earth. American designers especially, you'd think, living in the nation that consumes more than a third of the world's resources, should be taking the lead. Yet as everyone knows, we're far behind Europe.

Benedict Music Tent by Harry Teague.

Not a trade show

Whether it takes my hint or not, I'd hate for the design conference to disappear. It's just too crazy and too much fun. Other conferences are about dull careerist matters like networking and marketing. Aspen is anything but a trade show or an academic paperfest. It's a convocation of amateurs, using the word in its original meaning of people who do what they do out of love.

To enjoy the conference, you have to be interested in more or less everything. Who could predict the following (all of which happened in June)? Don Chadwick, designer of the most famous office chair of recent years, the Aeron, lounged comfortably in his product while he talked with other designers (who sat in their chairs) about human anatomy and what makes a great chair. A guy from the Netherlands, Dre Wapanaar, showed us his incredible variety of tents, including one that can contain an entire family while hanging from a tree so as not to disturb the earth. He finished his presentation with a long piano solo.

Cartoonist Ben Katchor presented, with many drawings and a straight face, his elaborate proposal for an elevated transit line to run through people's living rooms and bedrooms. A well-catered outdoor lunch took place on a red table that was as long as a football field and slithered like a fevered snake among the trees.

It was a whole lot of ideas in the mountains, and it was hard to beat. ■

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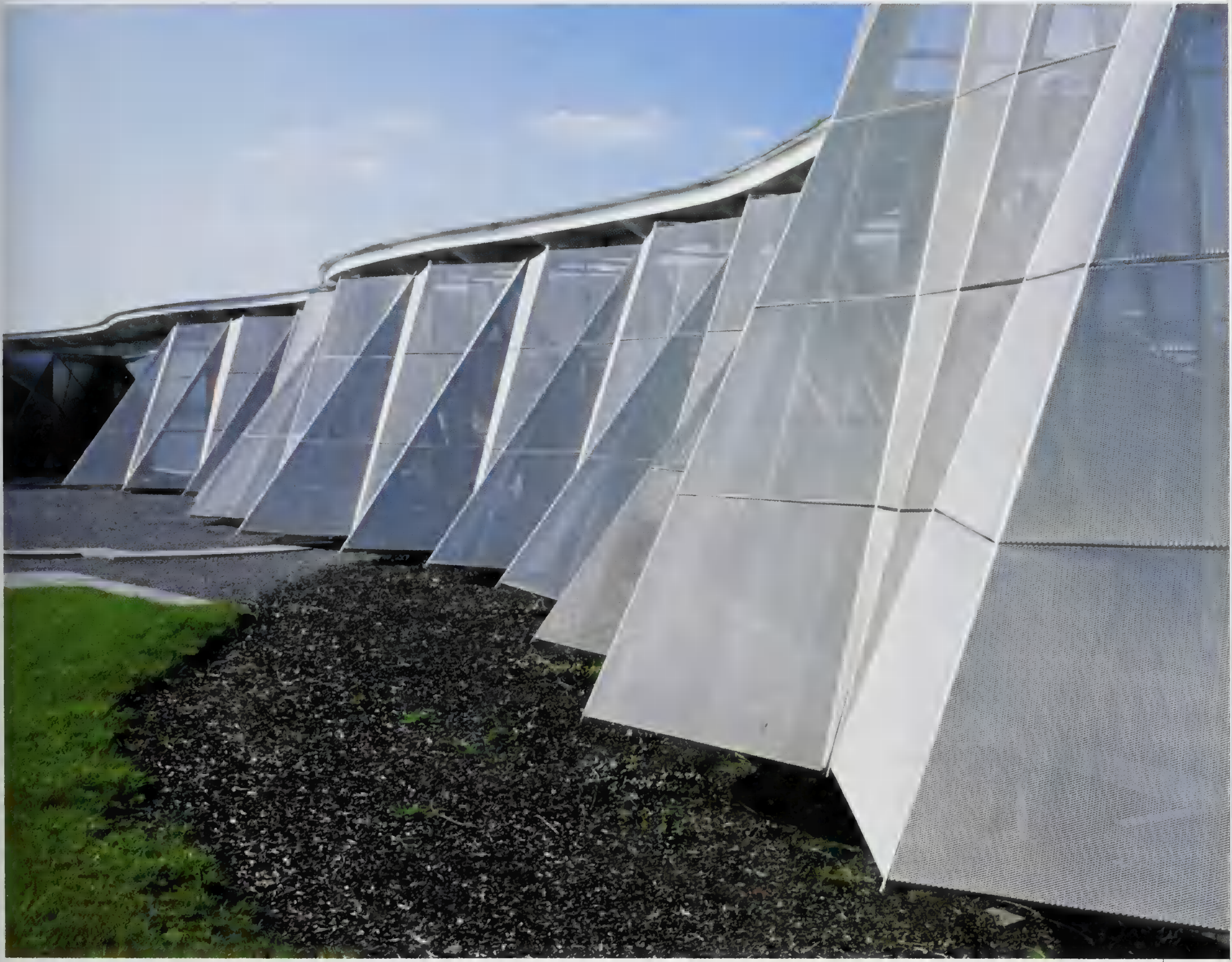
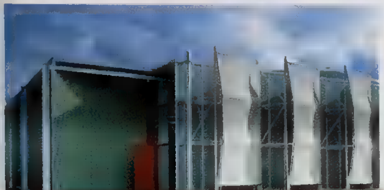


By Ingrid Whitehead

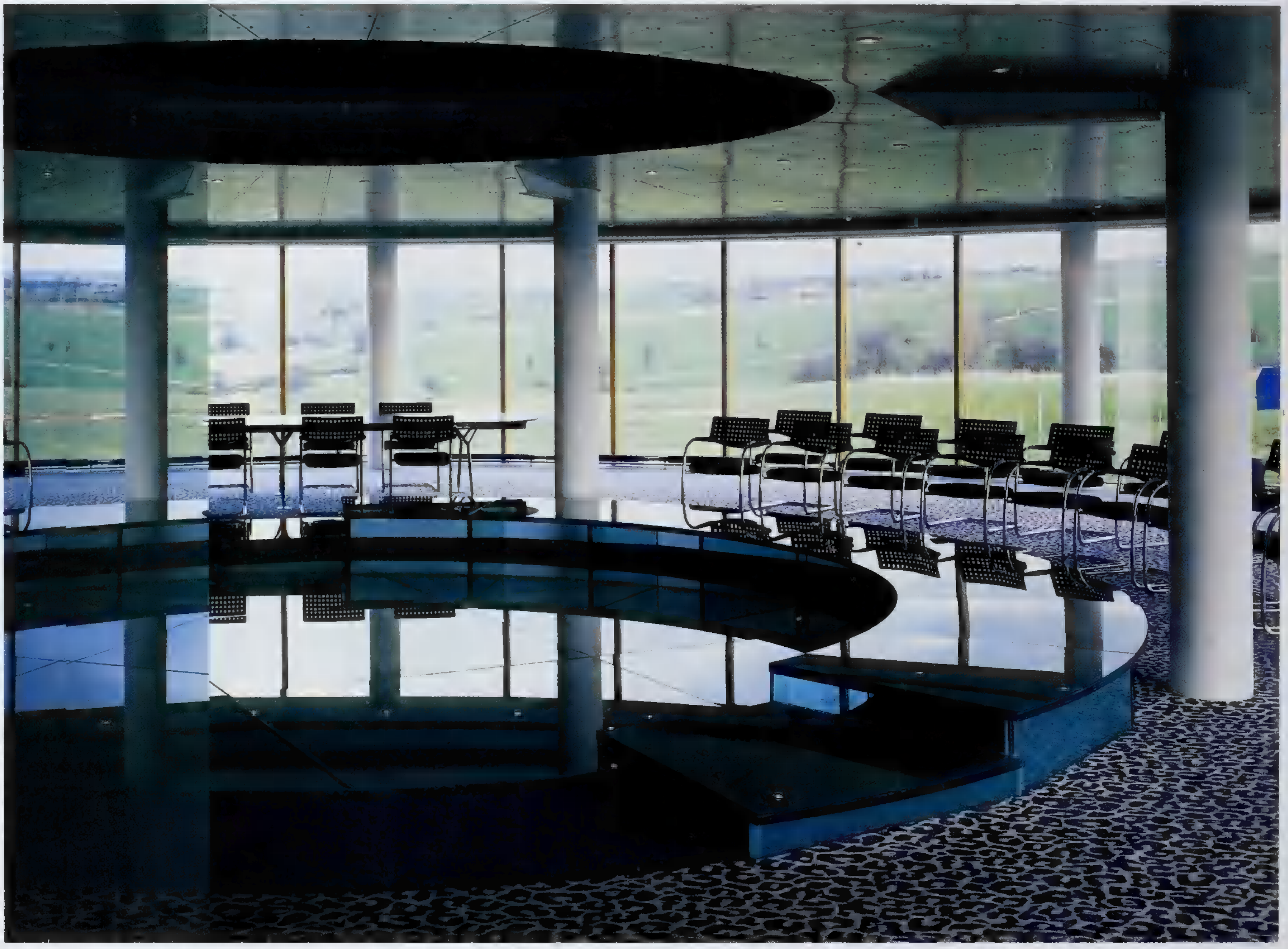
Fantastic flux shapes a British distribution center

It's hard to believe that Simon Jersey makes uniforms. The British company's ever-evolving headquarters building, designed by Studio BAAD and located on a six-acre site in northern England's East Lancashire, is anything but consistent, symmetrical, or regular. Rather, the headquarters and garment-distribution center is a study in building evolution and flexibility.

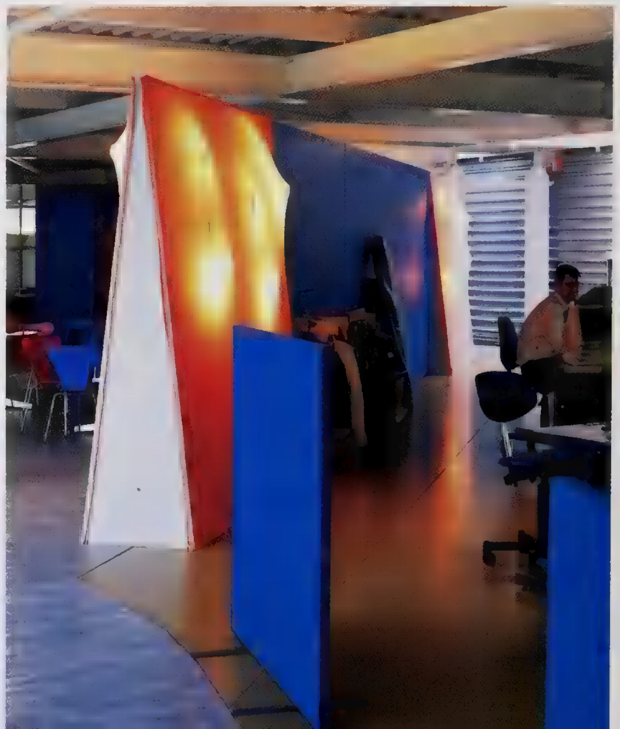
West Yorkshire-based Studio BAAD was relatively unknown when it was commissioned in 1988 to build a new building for the then-fledgling manufacturer of industrial clothing. Since then, Simon Jersey's staff has grown from 20 to over 320, and the company has retained the architectural services of a growing Studio BAAD [see RECORD JULY 2001, page 60, for the firm's up-and-coming project with Philip Johnson] to expand its facilities.



A sloping site provides access to the building at two levels, with the lower floor accommodating production, design, and storage areas, and the



Farmland surrounds this display area (above), where clients can watch fashion shows and view products; fabric dividers shape design areas (below).



upper one accommodating administrative offices—complete with views of the Pennine Mountains. Two glass "drums" flank a single-story open-plan administration office. One "drum," at the west end of the new facility, serves as a dramatic entranceway. The other, at the east end, comprises a three-story glass building with accounting in the basement, an open-plan office for directors and a staff restaurant on the first floor, and a presentation suite for training, fashion shows, client meetings, and conferences on the top floor.

Philip Bintliff, principal with Studio BAAD, credits an open-minded client with allowing the designers to use innovative techniques and materials. "The design process developed through osmosis and discussion," claims Bintliff. "There was never a written brief." Such fluidity of process led Bintliff to experiment, most boldly by using pleated sunshades made of expanded aluminum sheets to screen the production and design areas. Bintliff also played with light by using several different kinds of glass in the facility—reflective solar glass, fritted clear glass, and shaded clear glass.

The facility, which has received a RIBA Award and a Civic Trust Award, continues to expand—proof positive that some firms, and clients, work best by going with the flow. ■

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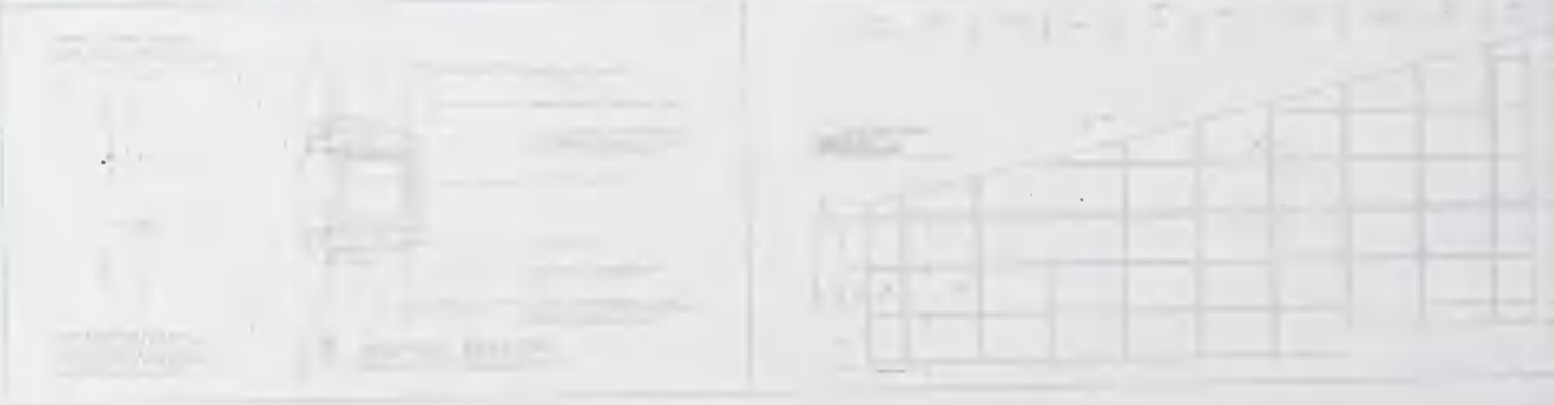

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CIRCLE 36 ON INQUIRY CARD

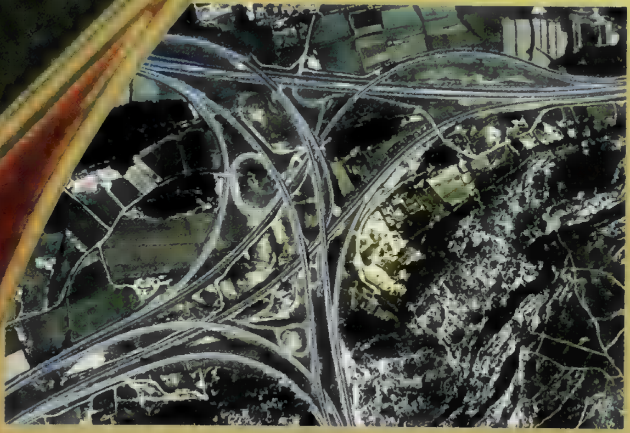
It's the future, not a contradiction.

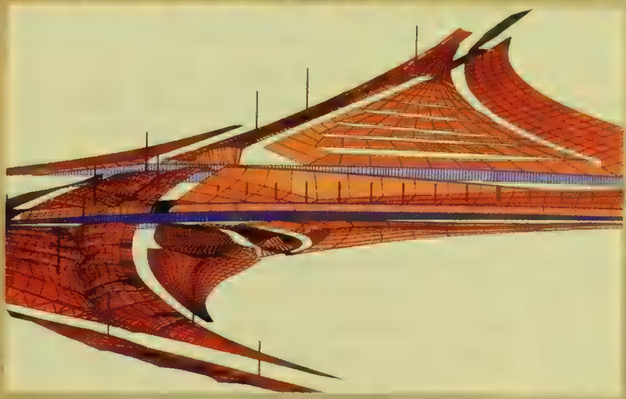
Landscape Urbanism

By James S. Russell, AIA

In the forbidding mallscape of Costa Mesa, in Orange County, Calif., an unexpected grace note has emerged in the stripes of pink bougainvillea that project horizontally from a pedestrian bridge over a busy arterial. These aren't the cute hanging baskets that festoon many a shopping venue, but are integral to the design of the bridge, appealing at auto speed below and beckoning to patrons strolling along the bridge that links two wings of the vast South Coast Plaza mall (page 68). The design is not by an architect but by a landscape designer, Kathryn Gustafson, and it is emblematic of the way that field is reinventing itself.

American landscape architecture continues to work in the familiar language of its English-garden

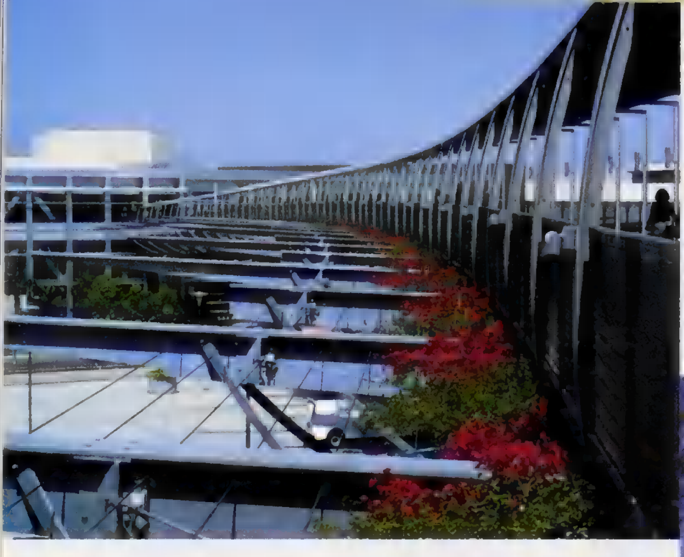




IMAGES COURTESY KATHRYN GUSTAFSON

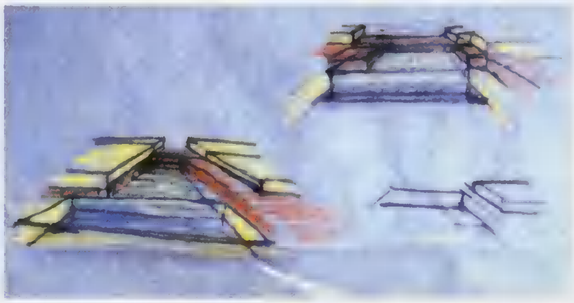
Project: *Marseilles highway intersection, Marseilles, France*
Landscape architect: *Kathryn Gustafson*

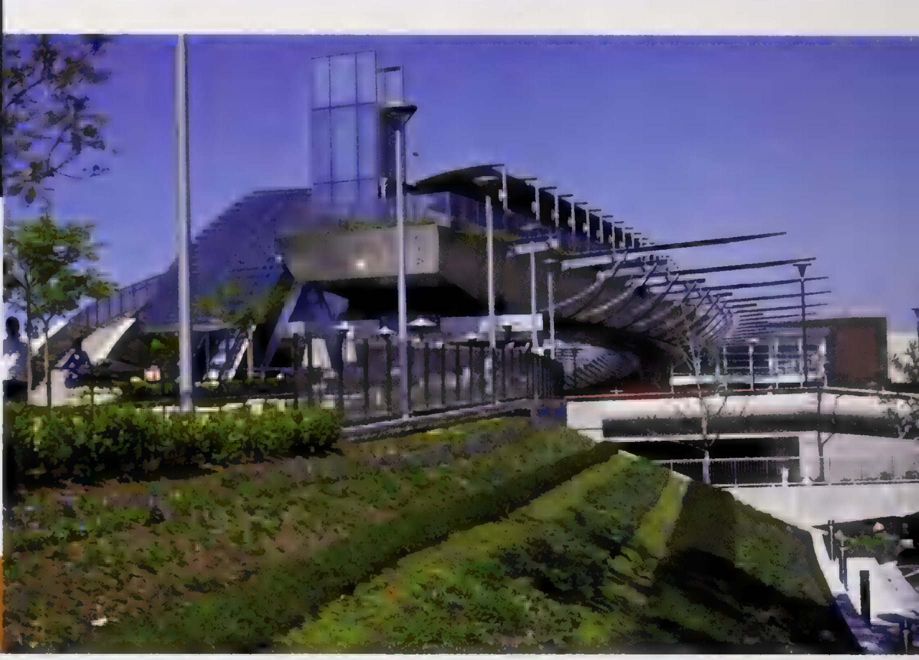
To avoid offsite disposal of soil from roadcuts, Gustafson sculpted it into mounds and swales, amplifying the shapes with the color and texture of plantings.



Project: *The Bridge of Gardens, Costa Mesa, Calif.*
Landscape architect: *Kathryn Gustafson*

Landscaped berms and flower-festooned struts humanize a pedestrian passage in a mallscape of asphalt.





origins—nature tamed and aestheticized for man's use and appreciation. But a confluence of trends has created an unusually rich, creative ferment in the field these days. In fact, landscape architects have arguably been more aggressive than architects in taking on new roles and redefining what they do.

Landscapes become hardscapes

Gustafson, who has worked in France for most of her professional life, didn't hesitate to take on more than just the planting. "My peers say I'm more of a sculptor than a landscape architect," says Gustafson. The curved and creased forms she carves in clay do possess a sculptural as well as an architectonic sensibility. "We're working more on urban sites, and a lot of the information of the site comes from architecture," she explains. "I try to make the architecture and landscape architecture fit together as a solid piece."

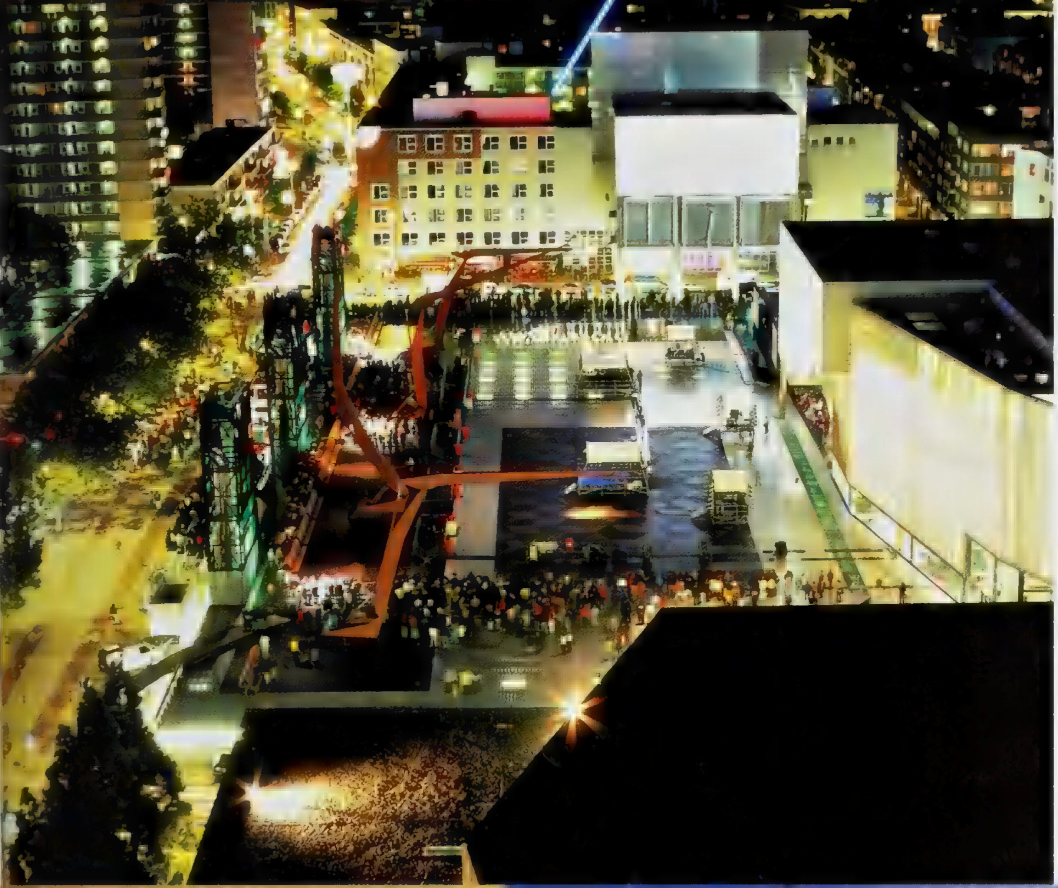
Gustafson artfully composed the soil from new highway-intersection road cuts into a sculpted and colorfully planted automotive welcome to the city of Marseilles (page 67). And with British architect Ian Ritchie, she's designed power-line pylons.

As more municipalities understand the economic-development potential of urban amenities, unique opportunities for urban landscapes are cropping up. In Rotterdam, West 8, a firm that combines urban planning expertise with landscape design, capped a parking structure, not with greenery, but with a hard-edged urban plaza, decked in wood and metal. Sounds from moving vehicles drift up from below, along with artificial steam and light effects. Giant articulated street lights move through an arc choreographed automatically or by users (page 69). It's a bit of punk urbanism that has become a popular gathering place.

Landscape as a cultural medium

Just as buildings inevitably reflect their times, landscape design increasingly reflects cultural currents that have been played down in the past. For example, an eight-acre park by Michael van Valkenburg, in Charleston, N.C., recognizes the racial divide that has characterized the city historically and spatially. And in Washington, D.C., landscape architect Johnpaul Jones and Navajo/Oneida ethnobotanist Donna House are collaborating on a garden for the Museum of the American Indian. It will reintroduce native plantings to the ambience of specimen trees and lawn on the Mall, and showcase Native Americans' use of plants.

Historians are also viewing designed landscapes as worthy of the same care and scholarship as landmarked buildings. The National Park Service's Cultural Landscape Initiative seeks to marry modernization with preservation in projects for the majestic Columbia River highway in Oregon, and in the restoration of Philadelphia's Beaux-Arts Benjamin Franklin Parkway. "Part of our stewardship role is to get highway people, who think only in terms of crash standards, to speak to landscape historians," says Charles Birnbaum, FASLA, coordinator of NPS' Historic Landscape Initiative. Part of the education function is also to help people understand that historic preservation applies to settings larger than individual buildings. Historians work with designers to interpret American industrial history as "heritage



Project: *Schouwburgplein, Rotterdam, Holland*
Designer: *West 8*

Festively lighted garage-exhaust stacks, moving, articulated light fixtures, and theatrical uplighting create a popular downtown urban stage.

corridors” (involving landforms and architecture) and to offer interpretive context for interrelated industrial and transportation infrastructures. As a side benefit, people begin to take pride in historical artifacts that otherwise sit as symbols of economic decline. And the growing interest in industrial history and related landscapes can attract redevelopment to places bypassed by today’s economy.

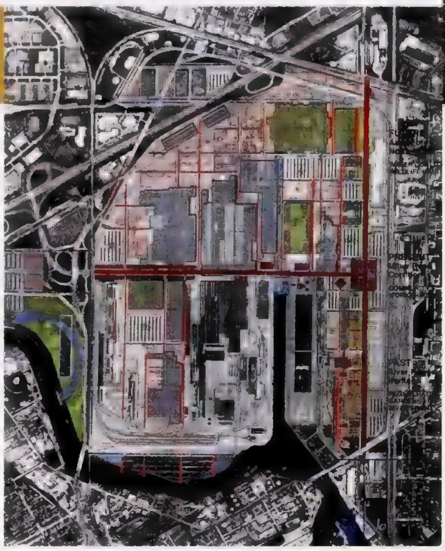
The Park Service and the Cultural Landscape Foundation (a private nonprofit recently founded by Birnbaum) likewise try to get people to think in terms of artistically related landscapes. “We’re learning to accept various layers in the landscape,” says Birnbaum, who cites Allegheny Commons, Pittsburgh’s oldest park. As part of a plan to expand an aviary in the park, Birnbaum persuaded citizen activists to save a battered Modernist addition to the park designed by John Simon, a key figure of the 1960s. “We’re trying to recognize a continuum of important design,” says Birnbaum, “from the 1860s until now.” Threatened architectural landmarks of the postwar era are often entwined with landmark-quality landscape features—the Isamu Noguchi courtyard gardens, for example, awaiting demolition at the 1957 Connecticut General headquarters, Bloomfield, Conn., designed by Gordon Bunshaft of Skidmore, Owings & Merrill.

A new landscape urbanism

One of the most influential recent landscape-architecture competitions, for Downsview Park, near Toronto, says a great deal about where design is going and how the roles of designers are changing. The setting was not a bucolic greenfield, but a former military base littered with abandoned buildings and runways. The competition brief called for the accommodation of a variety of new commercial and institutional uses around and on the site’s 320 acres. All five competing teams “desegregated city and park,” noted a text by Bay Brown, accompanying an exhibit of the finalists at New York’s Van Alen Institute. They “dispensed with the 19th-century notion of the park as bucolic refuge,” she continued. The entries emphasized strategy and process over design and product, and blurred the lines between landscape and architecture. Indeed, the winning design, by a team including architects Rem Koolhaas of OMA in Rotterdam, Toronto-based Oleson Worland, as well as designers Bruce Mau, Toronto, and Amsterdam-based Inside/Outside, proposed not a design but a 15-year strategy (page 72). Each stage, however, is intended to make a palpable change in the landscape, inspiring greater use and greater public support so

Project: *Ford River Rouge Site, Dearborn, Mich.*
Design team: *William McDonough Architects and D.I.R.T. Studio*

A phased effort to bring "sustainable industry" to a polluted site combines phytoremediation with environmentally sustainable architecture.



that subsequent stages will get developed.

Even though Downsview is described as a national park, the government is leery of commiting the $140 million (Canadian) the park is anticipated to cost, and it does not want to cover ongoing maintenance expenses. Indeed, the adjacent commercial uses are supposed to generate the cash to build and maintain the park. And Canada is not alone. Few American jurisdictions are building large, ambitious parks in the Central Park mode.

There is another reason that the design of large-scale projects has become process-oriented, rather than only design-oriented: Grand visions and master plans, however thoughtful, simply become obsolete through circumstances. That's why Philadelphia-based James Corner (another Downsview finalist) designs "interim states"—manageable schemes that can be realized in the short term until budgets permit additional work.

Corner, with New York architect Stan Allen, is using such a strategy to avoid the pitfalls of master plans in their urban-design recommendations for 11 miles of Delaware River waterfront in Philadelphia (page 74). "You've got 6,000 acres to move," says Corner, "and you can't do it overnight." In the preliminary documents submitted to the city in July, Allen and Corner proposed a lot of landscape design, but not a great number of parks. "Landscape as a green park is expensive to maintain," Corner explains, "but as an interim use that will improve the ecology of the site, that's popular." The solution does not rely on landscape design alone, however. "I don't want to be just a consultant on a team and [Allen] doesn't want to be just the architect," says Corner. So they have joined forces in a new consultancy they call Field Operations. "The North Delaware project is infrastructure, architecture, landscape—the whole gamut," explains Corner. They call what they do "landscape urbanism," because they want to approach projects in a "more inclusive way than traditional disciplinary divisions would normally permit," he adds. Among the biggest challenges is simply to change attitudes about the area: "It's perceived by people as a line of derelict industry," Corner explains. "It's hard to see the river now, but once you get there, you see how spectacular it is." The early phases of the project are intended to reacquaint citizens with their riverfront, which may spur development that no master plan, however elegant, could anticipate.

It's easier for landscape architects to accept process as product because they are used to dealing with a living entity that will change over time no matter what. Building movement is usually conceived in fractions of an inch, but landscape

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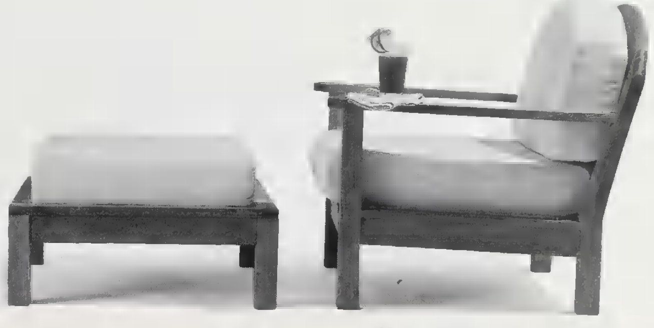
NEW TEAK GIVERNY LOUNGER

Project: *Downsview Park, Toronto, Ontario*
Design team: *OMA; Oleson Worland; Bruce Mau; Inside/Outside*

A first phase of clover will enrich the soil while beginning the long-term transformation of a damaged industrial landscape. In later phases, the designers intend to overlay a dense network of paths among nodelike clusters of trees.

designers are early inculcated with the notion that natural succession may gradually transform a lake into a meadow and a meadow into a forest. "Architects talk about buildings being alive, but that's a metaphor," explains Boston-based Michael van Valkenburg. "A building doesn't die if it doesn't get water or sunshine. Landscape architecture is feral—it's about design thinking, but it's always partly wild."

Planting toxic remediation

Landscape architects have used this grounding in regional ecology to unite a social need (cleaning up polluted industrial sites) with an environmental ethic. For almost three decades, the federal government, through its Superfund program, has sunk billions into toxic-waste cleanup, but clean soil, even when it cost millions to achieve, does not by itself assure appeal to redevelopers. It's another story when designers enter the scene.

The pioneering project that singlehandedly invented a genre was the 1978 Gasworks Park, designed by Richard Haag, which married the spectacular industrial archeology of a closed gasification plant to a stunning waterfront site in Seattle. Haag detoxified the soil using plantings, a technique now dubbed phytoremediation, which has only recently been widely deployed. (The city completed only a fraction of what Haag envisioned, has scandalously neglected what was built, and now, ironically, has embarked on a costly engineered means to further "clean" what is now a low-risk site.)

Such projects are meeting wide public applause, though they are still tentatively deployed. They have also escalated dramatically in scale. Julie Bargmann whose D.I.R.T. Studio is based in Charlottesville, Va., has collaborated for several years with artist Stacy Levy, historian Allen Comp, and hydrogeologist Robert Deason on a "regenerative park" in Vitondale, Pa., about 60 miles east of Pittsburgh. The design both interprets and aestheticizes the process of converting acid drainage from the region's dense networks of abandoned mines into clean water. Much of the time has been spent raising funds for this 45-acre project, even though it may stand as a model for the cost-efficient reclamation of an enormous, damaged landscape. "There's something like 3,400 miles of waterway polluted by acid mine drainage," says Bargmann. The project includes a series of settlement ponds where successive stages of treatment are visible in the color of the water, which enters tinted a heavily polluted rust red and exits clear. The process is echoed in color-matched plantings. The treated water spills into a constructed wetlands adjacent to the river that Bargman calls "the finishing rinse" (see related story in Building Science, this issue, page 127.) Part of the reclaimed landscape will be formed into conventional picnic and playground areas, but bits of the giant colliery that once occupied the site will evoke its past use, and a pedestrianized rail bridge will offer an overlook.

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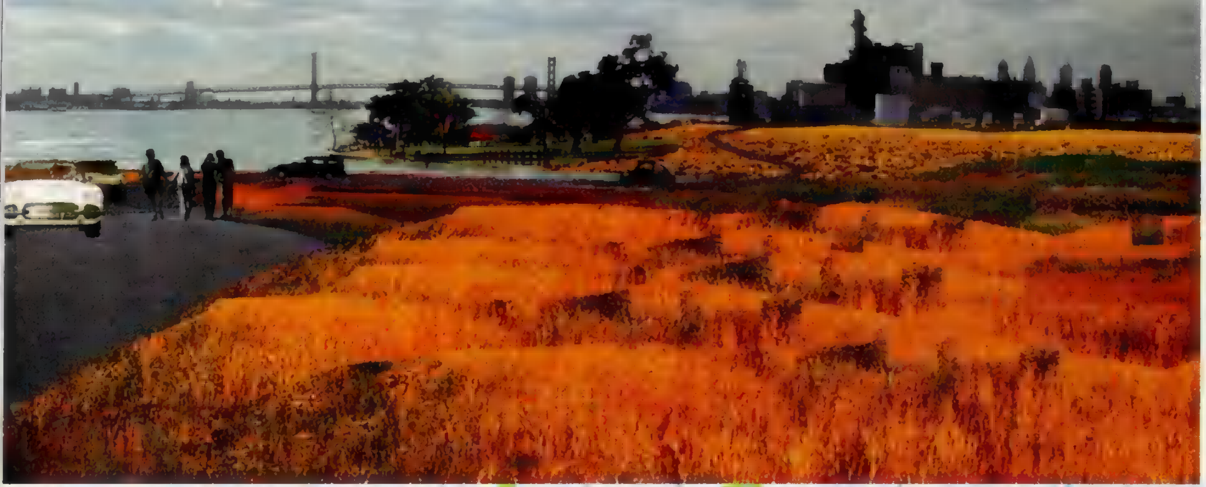
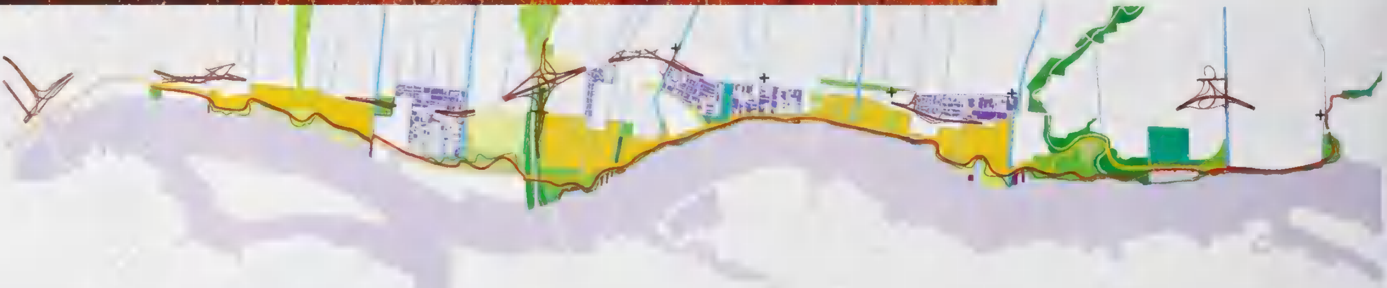


Project: *Delaware Riverfront plan, Philadelphia*
Designers and planners: *Field Operations*

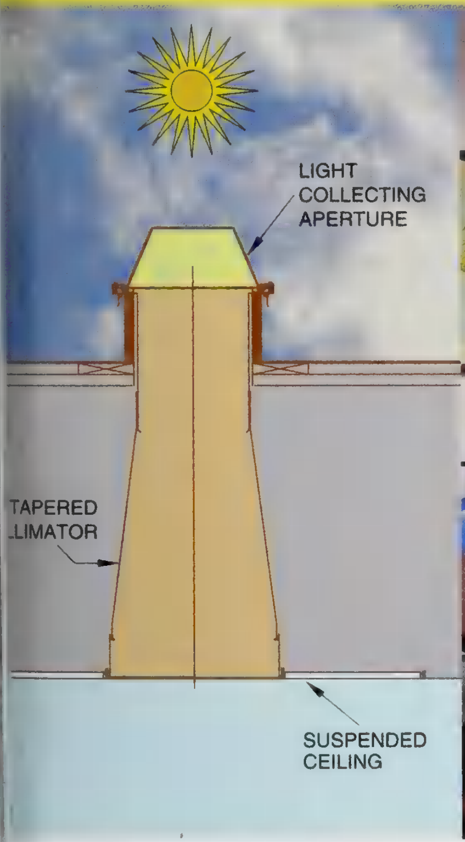
Interim park uses will bring Philadelphians back to the riverfront in anticipation of a long-term mix of recreation, housing, and other uses.



Bargmann specializes in projects that entwine noxious-site cleanup with civic aspiration. Her highest-profile project is a collaboration with architect William McDonough on new facilities for Ford, at its vast but heavily polluted River Rouge plant south of Detroit (page 70). It's one of the most important settings in American industrial history, because it is where, for over 16 years starting in 1918, Henry Ford built a fully integrated automaking complex, a design copied worldwide. Arriving by canals, roads, and rails, raw materials were turned into parts, which were then assembled into finished vehicles. Ford's architect was Albert Kahn, who designed several buildings at the 1,200-acre site that remain among the most elegant essays in 20th-century industrial architecture. William Clay Ford, Jr., Ford's board chairman, hopes to make Rouge again an emblem of innovation, but this time, one of "sustainable industry." The design team has installed a large porous parking lot to reduce runoff, soil-cleansing planting, and new manufacturing facilities incorporating such sustainable-design features as a sodded roof. Clerestory lights and monitors, a trademark of Kahn's naturally ventilated buildings, will also reappear in new facilities. The team has also persuaded Ford to preserve some of the remaining fragments of the site's engineering prowess. But Ford has not signed onto many of the team's more ambitious goals. "What D.I.R.T. tried to bring in is the idea that you could continue to produce hundreds of Mustangs daily while regenerating the site," says Bargmann. "But the day-to-day production folks aren't convinced yet that these principles and technologies of 'industrial ecology' make a lot of sense."

There is now precedent for very large-scale transformation of damaged landscapes by design. "The massive change of land use entailed by industrial sites creates a whole new park-development potential," says Barbara Wilks, a New York City architect and landscape architect. She sees the public as more engaged in reusing urban leftovers, and points to Manhattan's High Line, a rusting, long-abandoned elevated railroad track that slices through almost two dozen blocks of rapidly gentrifying Chelsea. A few years ago, activists clamored for its removal; now a substantial constituency wants to see it saved and put to recreational use. And it seems only fitting that the aptly named Fresh Kills, a giant mound of trash looming over New York's borough of Staten Island, is the subject of a design ideas competition. ■

Here comes the sun.



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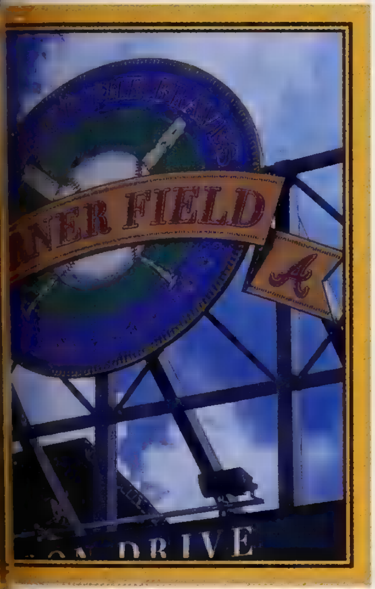

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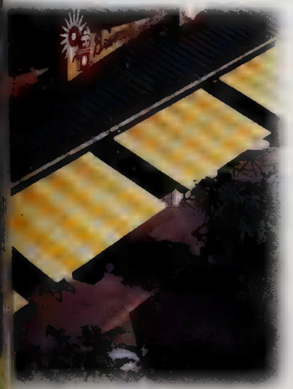

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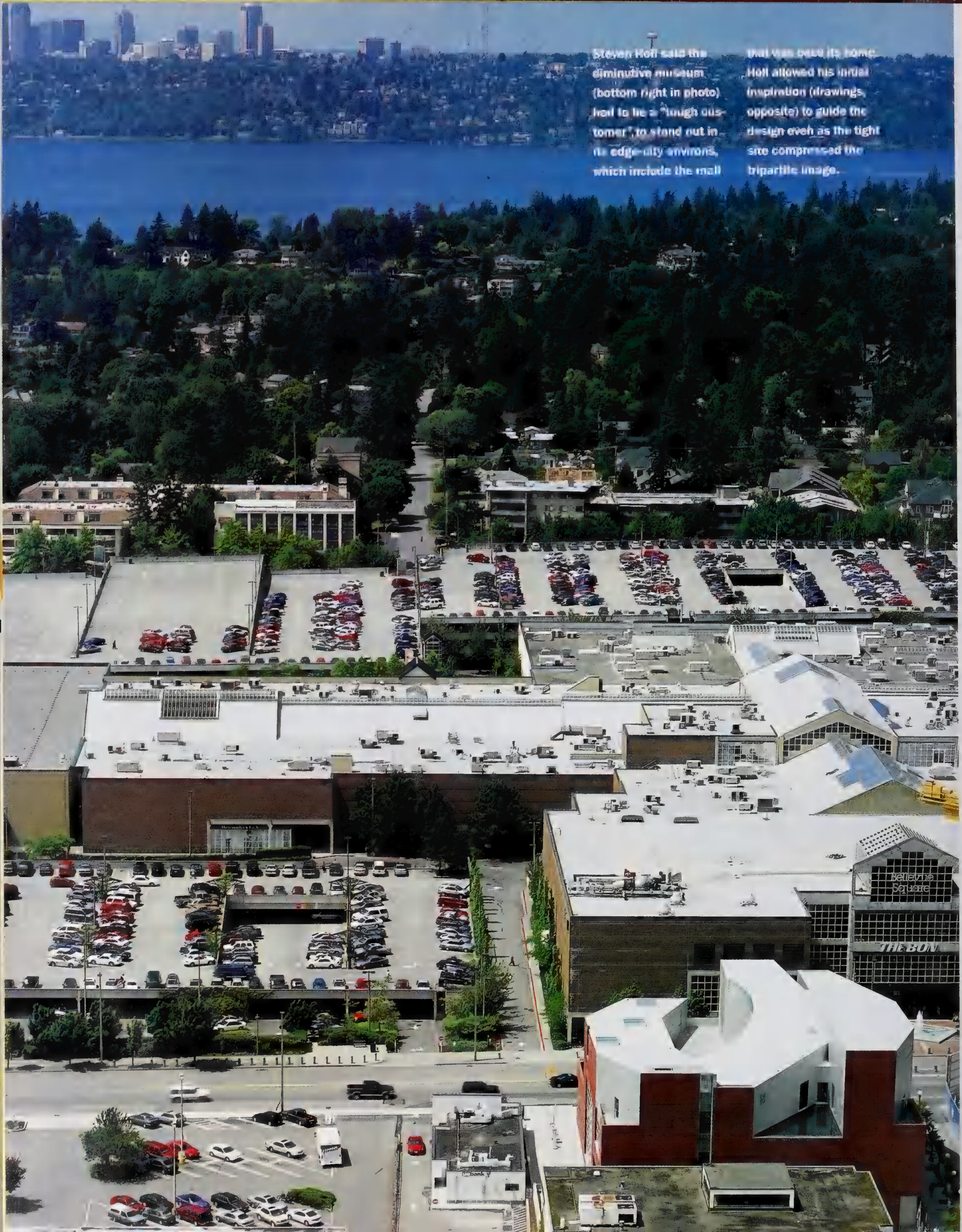
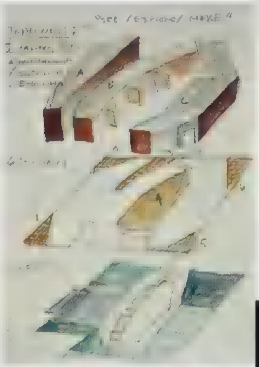


Steven Holl said the diminutive museum (bottom right in photo) had to be a "tough customer" to stand out in its edge-city environs, which include the mall that was once its home. Holl allowed his initial inspiration (drawings, opposite) to guide the design even as the tight site compressed the tripartite image.

For the **BELLEVUE ART MUSEUM,** which values making art as well as viewing it, Steven **Holl** invented a place that engages visitors with architecture—and with one another

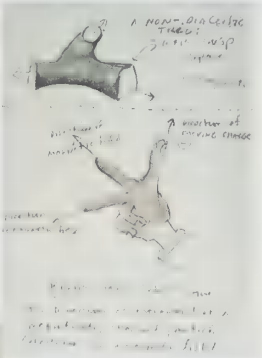
By Sheri Olson

Thirty-three years after Steven Holl's first draftsman job acquainted him intimately with the asphalt environs of Seattle's biggest suburb, he returned to build what he describes as a prototype for urbanizing suburban sprawl. "A single piece of architecture can be a more effective catalyst for change than a corps of urban planners," he says. It is an ambitious statement with an outcome difficult to judge. If urban means engaging the sidewalk, holding the street edge, and replacing a parking lot with an underground garage, the Bellevue Art Museum (BAM) does all that. But it is clear that Holl aims for more when he refers to the project as a "social condenser," suggesting the density of connections and opportunities for chance encounters that suburbs have rarely fostered. This does not happen overnight, but, like a rainmaker, Holl seeds the process.



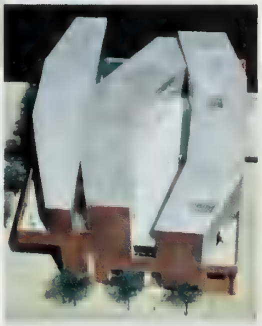
Fortunately, Holl's agenda meshes with the museum's. BAM is unusual in the degree to which it reaches out to its community and encourages visitors to produce art, not just look at it. A row of continuously occupied potters' wheels, visible in a large second-floor window above the front entry, makes the agenda clear. "We want you to walk in and smell the paint, "says BAM director Diane Douglas. The museum has no permanent collection (it was traded to another regional museum in exchange for borrowing privileges) to better focus limited resources on commissioning works, bringing in traveling shows, and cultivating artists. BAM's definition of "artist" is broad: from preschoolers signed up for arts camp to artists-in-residence from around the world.

Holl picked up on the museum's propensity for describing itself in terms of three (its motto: see, explore, and make art). Using the triad as a starting point for the design, he borrowed a conceptual strategy from the field of physics. Its Right-Hand Rule is a mnemonic device in which the splay of thumb, index, and middle finger models the direction of charged particles in a magnetic field (top drawing). Holl sees a connection to the museum in the way forces move in opposing ways but remain part of the same system. While it is a leap to connect



this jumping-off point to the finished project, the three galleries grafted on top of the building's cube (middle drawing and model) are visibly descended from early conceptual models that show sawed-off fingers of plaster-filled latex gloves.

As an institution, the museum had equally unusual beginnings: first as a sidewalk art show in 1947, followed by stints in a schoolhouse and a funeral home before its last incarnation on the top floor of the sprawling Bellevue Mall. The intention of the mall space was laudable—bring art to the people—but the location was too out-of-the-way to draw traffic. The new 36,000-square-foot museum sits directly across the street from the mall, on a high-visibility corner. A grocery store lies to the south, a 41-story mixed-use project is rising on the north, and a furniture store abuts it on the east.

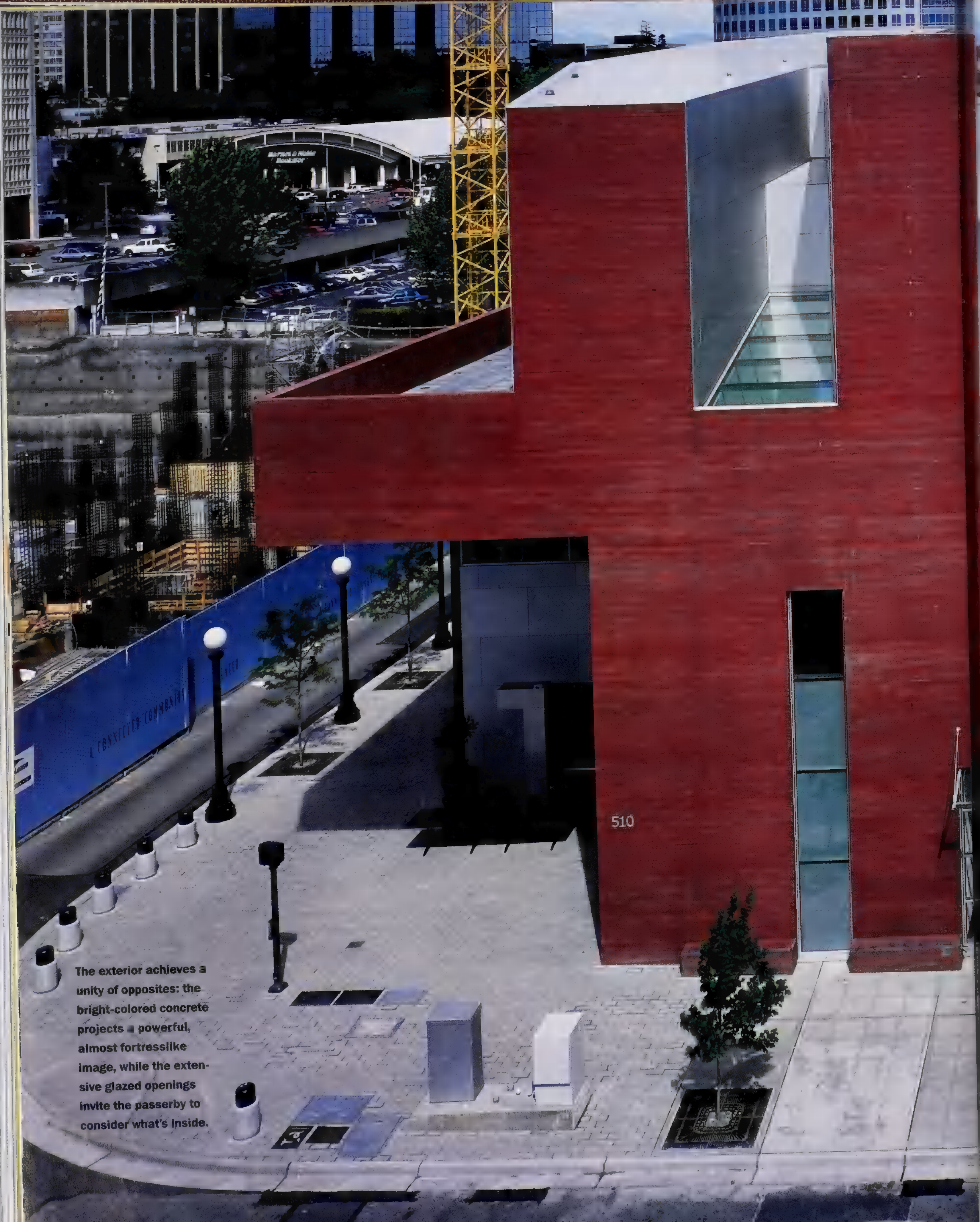


In such confused surroundings, the design is distinguished by the authority of its architectural language. Holl notched the 60-foot-tall volume so that the structure reads as an intriguing but undecipherable glyph. The dense yet variegated texture of Holl's board-formed exterior concrete surface draws attention simply because it is palpably more real than its textureless synthetic-stucco-and-mirror-glass neighbors. (The effect was achieved by spraying concrete onto rough-sawn boards inside a steel slip form. During a continuous month-long pour, the contractor moved the form up as the concrete set. The technique minimized pour joints and allowed Holl to avoid control joints, achieving a monolithic surface.)

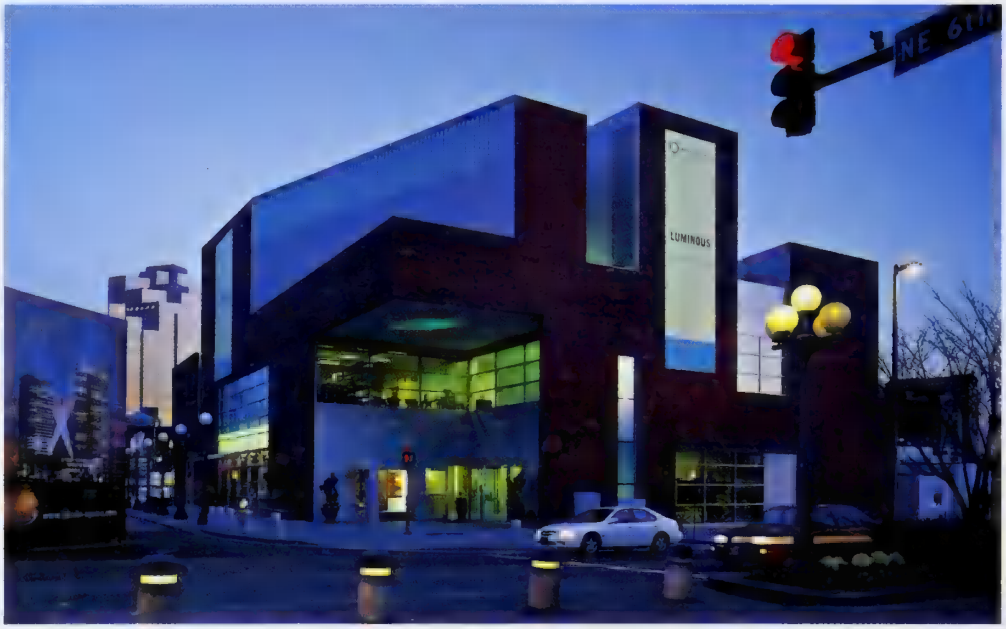
The notches in the mass reveal the red skin as thin, like an apple's,

Sheri Olson, AIA, *is* RECORD*'s Seattle-based contributing editor and the author of* Miller/Hull *(Princeton Architectural Press, 2001).*

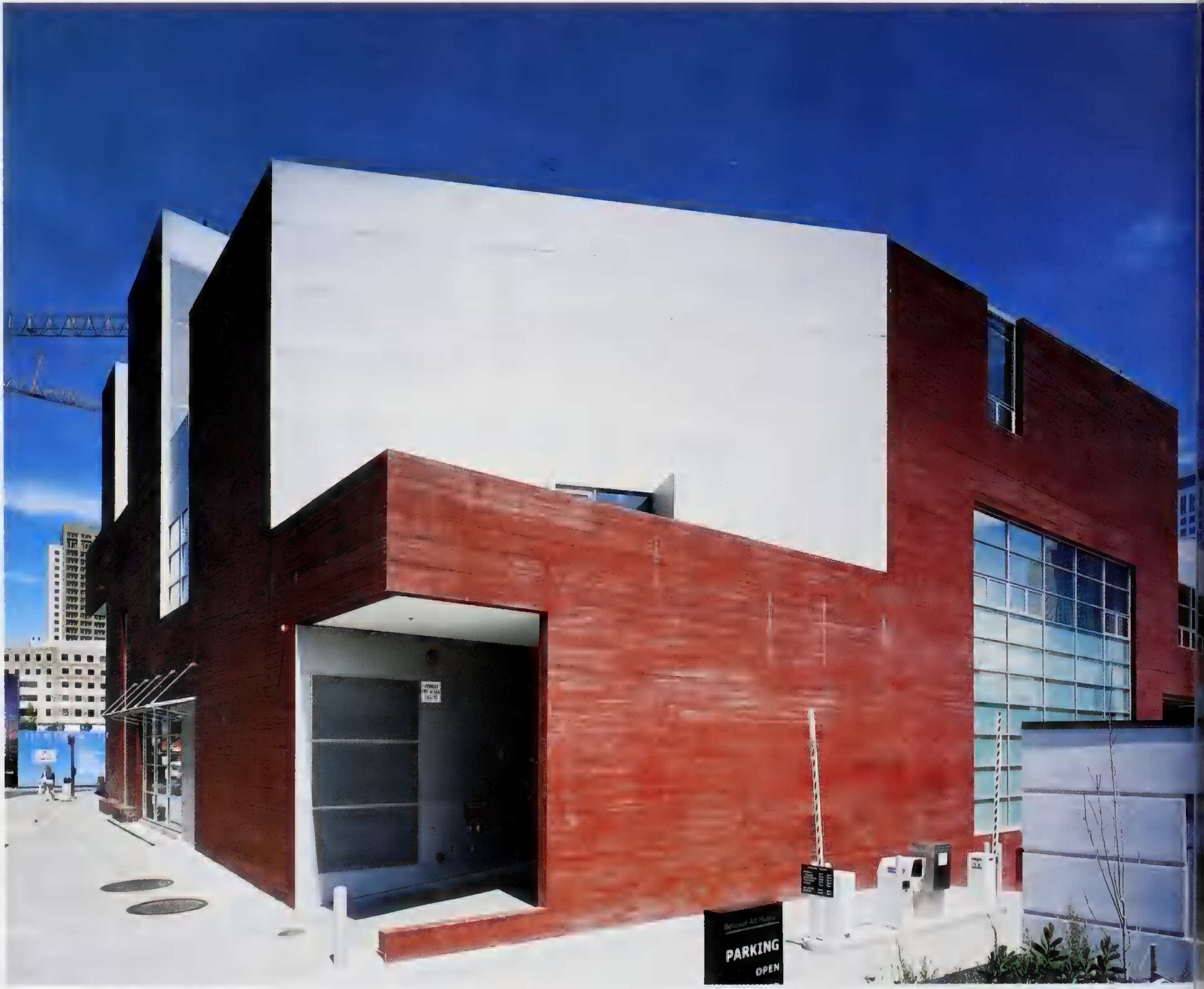
Project: *Bellevue Art Museum, Bellevue, Wash.*
Architect: *Steven Holl Architects—Steven Holl,* AIA, *Tim Bade, Martin Cox, Hideaki Ariizumi, Elsa Chryssochoides, Annette Goderbauer, Yoh Hanaoka, Justin Korhammer, Stephen O'Dell*
Associate architect: *Sclater Partners Architects—Alan Sclater,* FAIA, *Brad Smith*
Consultants: *Skilling Ward Magnusson Barkshire; Guy Nordenson & Associates (structural); Sparling Engineering; Nelson Electric (electrical); McKinstry (MEP)*
Contractor: *Sellen Construction*



The exterior achieves a unity of opposites: the bright-colored concrete projects a powerful, almost fortresslike image, while the extensive glazed openings invite the passerby to consider what's inside.



The museum's beefy profile draws visitors from a cutaway entrance corner (left) of a narrow pedestrianized street (opposite, top), to a mall entrance (vantage point of photo, left). The south elevation (below) rubs elbows with a drive-in bank. The concrete exterior gives way to aluminum panels and translucent glass planks (opposite, bottom).



with marine-aluminum panels hand-sanded to a soft, matte finish appearing as the "flesh" inside. A third of the exterior is a mix of transparent and translucent glass, creating an unusually open and light-filled museum. This also works in reverse: at dusk, which arrives early during Pacific Northwest winters, zippers of clerestory windows give BAM an enigmatic luminosity against the oyster-gray sky.

Holl counterbalances weight and weightlessness, playing the heft of the exterior against an ethereal quality within. The Forum is the heart of the museum. As its name suggests, it is a meeting place (in fact, the whole first floor, with cafe, store, and auditorium, is open to the nonpaying public), but its enigmatic, even spiritual, aura takes the visitor far from the traffic-clogged commercial environs of suburbia. Space slips through openings cut in corners; wall planes disappear up past the ceiling; and the black terrazzo floors mirror the bright white plaster walls to create a space that is defined yet boundless. For all the wall space, it's not easy to look at art hung here, but it is becoming the gathering place Holl hoped it would be: It's already heavily scheduled for weddings and parties.

The Forum invites comparison to a similar space at Kiasma, Holl's Museum of Contemporary Art in Helsinki [AUGUST 1998, page 86] in their shared function and importance. Where Kiasma's main atrium is more attenuated—the foreshortening of perspective is more extreme, and its ramp zooms more dramatically out of view—BAM offers a leisurely corkscrew sequence of unfolding spaces. A stepped ramp is the definitive element, physically altering a visitor's gait with deeper than normal treads. The steps are surprisingly comfortable, drawing visitors up to an oversized landing (used as stage, lectern, and bandstand) in the cusp of the public Forum. "By walking through the space, people become part of the design; they're central to the experience," says Douglas.

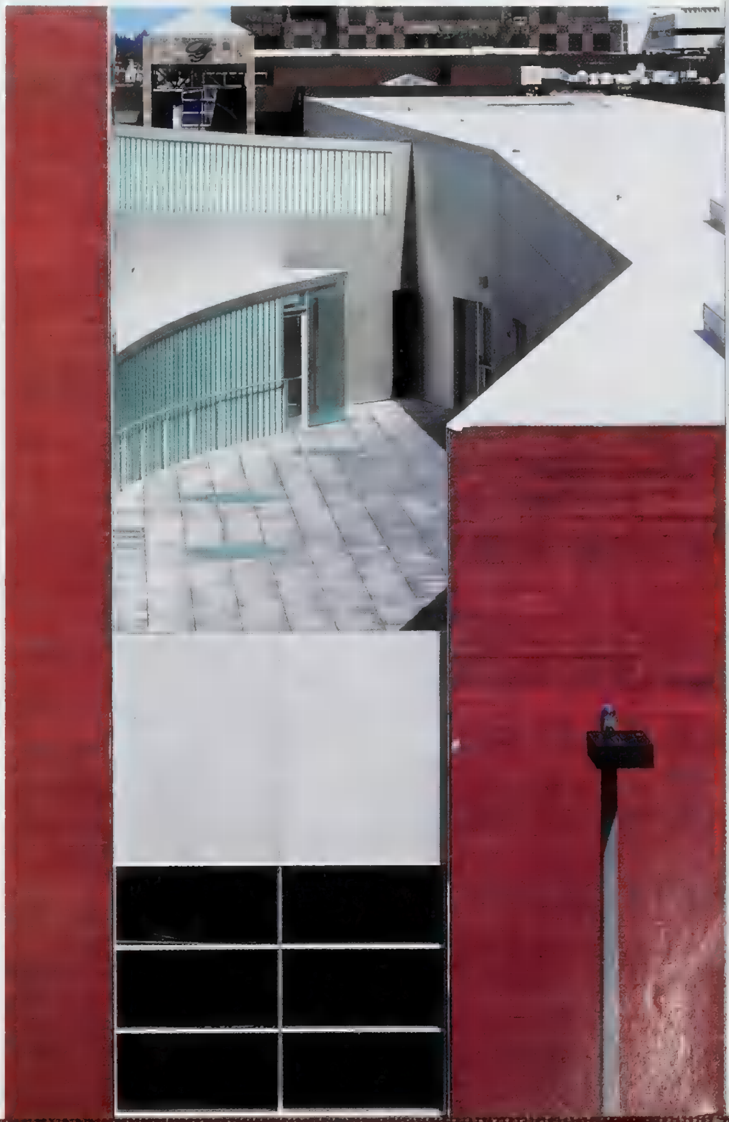
HOLL'S "SOCIAL CONDENSER" INSPIRES A DENSITY OF HUMAN CONNECTION AND CHANCE ENCOUNTERS THAT THE SUBURBS HAVE RARELY FOSTERED.

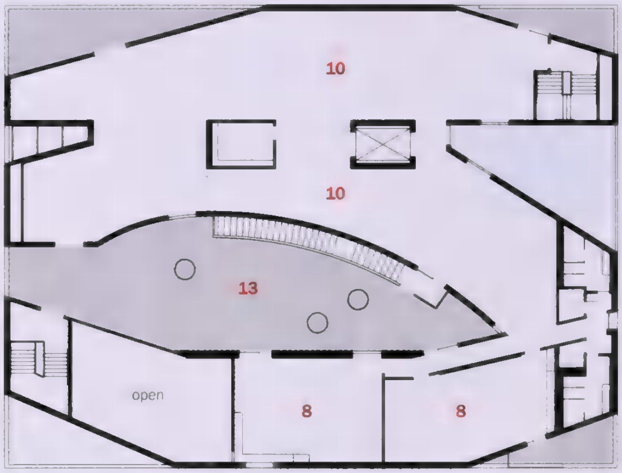
On the second level, the museum's unique mission becomes even more apparent. Behind an oversized, pivoting wood door at the corner of one gallery, you'll find an artist-in-residence who has agreed to share both studio and work process with visitors. You can watch amateurs at work in two of the museum's four classrooms.

From the second floor, a stairway clad in translucent glass disappears up into the ceiling. Light infuses this minimalist curve of space sandwiched between rough plaster and glacier-green glass. Holl opened the stair into a culminating outdoor space. The flattened ellipse of its enclosing walls brings to mind the surreal near-emptiness of a De Chirico painting; it focuses your view on the lens of sky above.

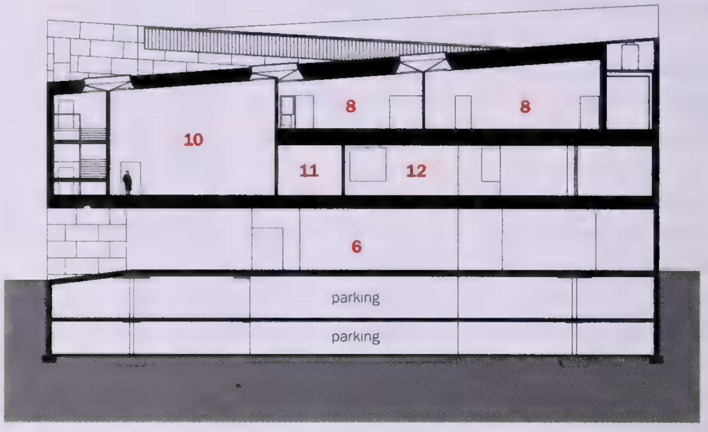
This Court of Light is one of six exterior terraces for sculpture and experimental artwork. On another terrace, an edgeless pool fills a triangular gap between galleries. Rippled reflections of sunlight animate the ceiling of the south gallery.

In the boomerang-shaped lofts on the third floor, Holl manipulates light not just to augment the spatial experience but to mark the passage of time. "Linear ongoing time has its parallel in the evenness of the light in the north gallery" is his mystical explanation. "Cyclic time has its parallel in the arc of the south gallery," where low winter sun traces its daily path along a narrow clerestory, "and fragmented, or gnostic, time has a parallel in the skylights of the classroom loft," where shafts of sunlight enter only briefly through punched openings. Douglas welcomed natural light, the bane of most museum curators.

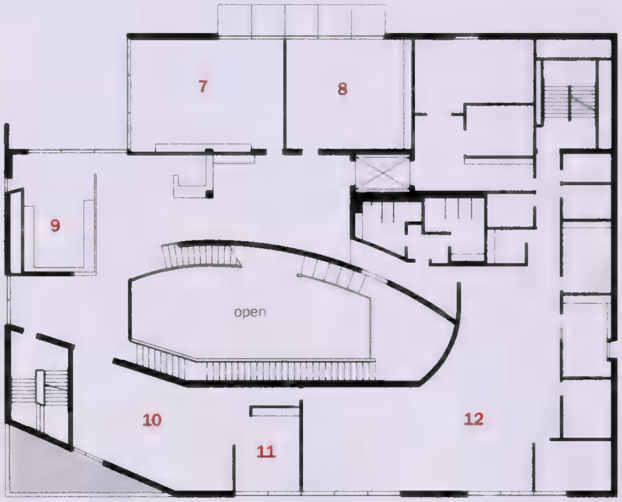




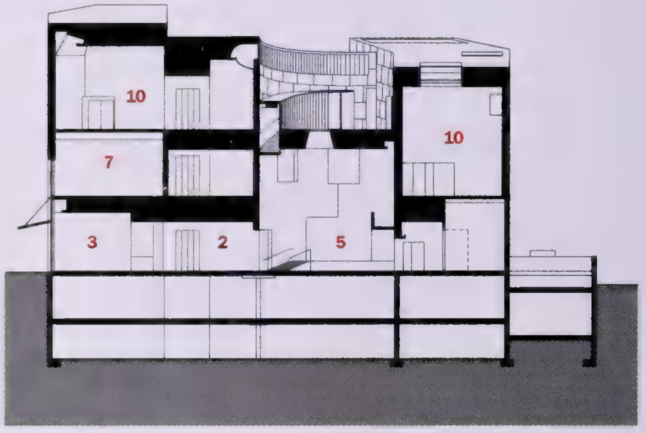
THIRD FLOOR



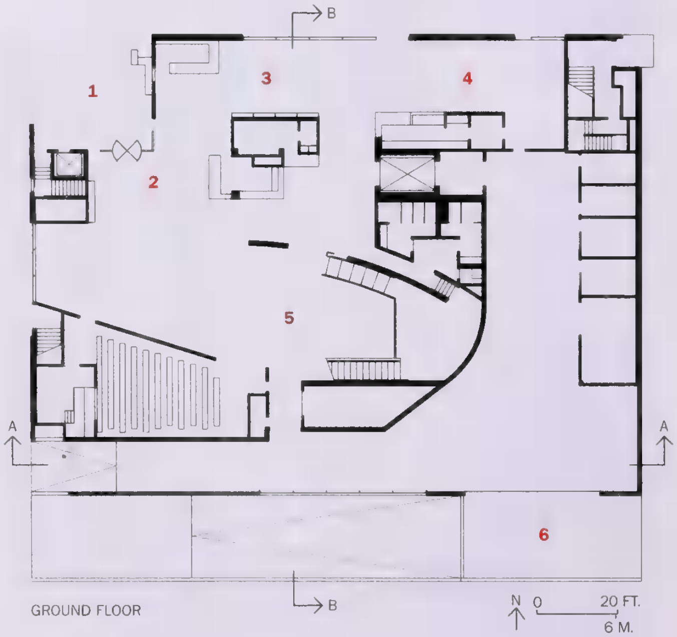
SECTION A-A



SECOND FLOOR



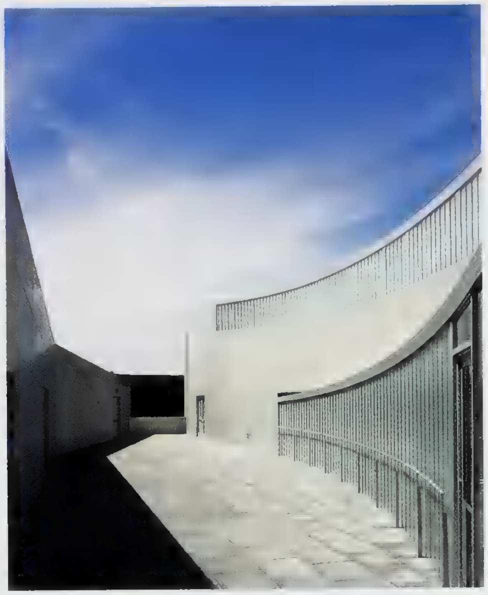
SECTION B-B



GROUND FLOOR

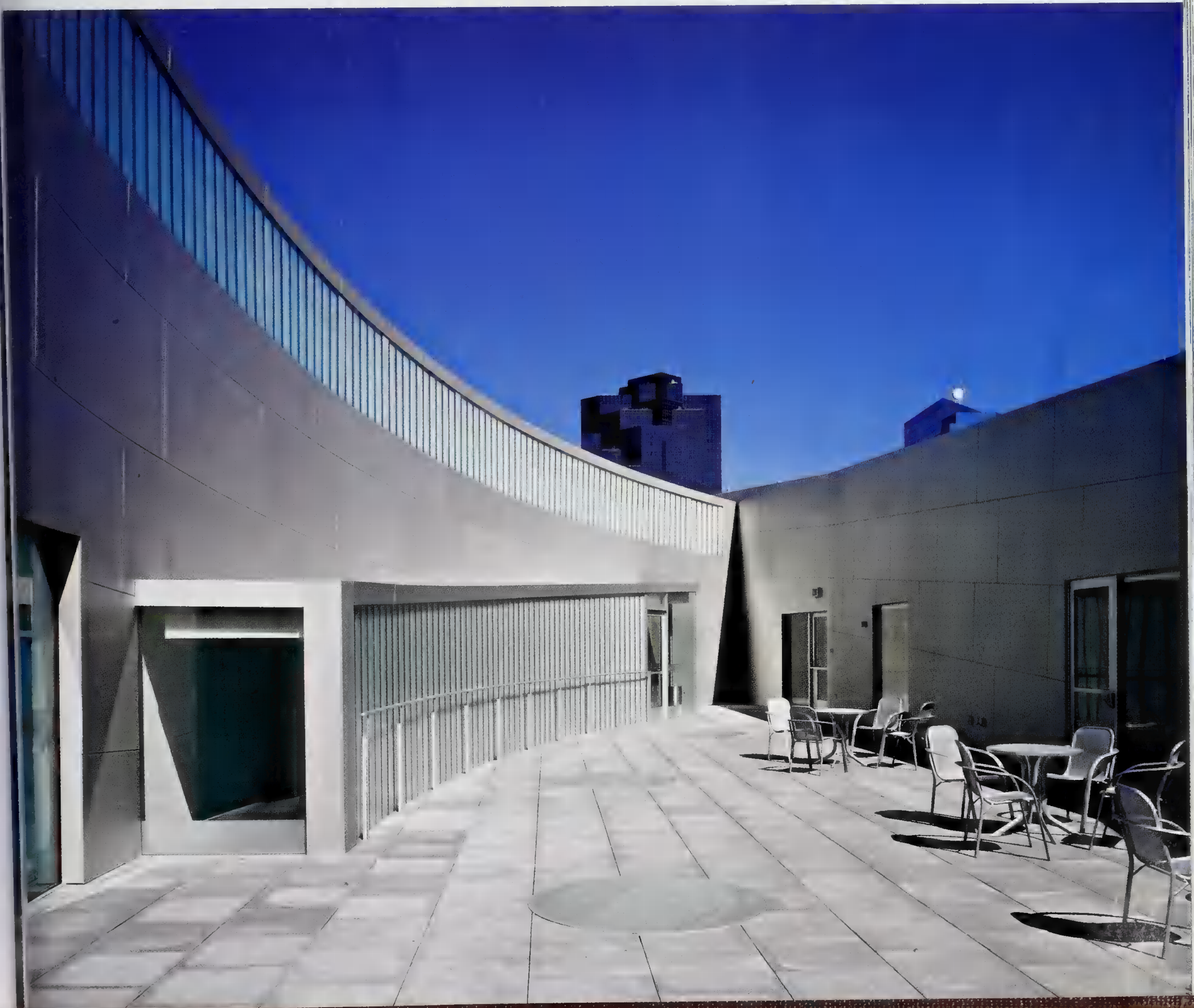
1. *Porch*
2. *Entry*
3. *Shop*
4. *Cafe*
5. *Forum*
6. *Loading*
7. *Ceramics studio*
8. *Studio*
9. *Library*
10. *Gallery*
11. *Artist-in-residence*
12. *Administration*
13. *Court of Light*

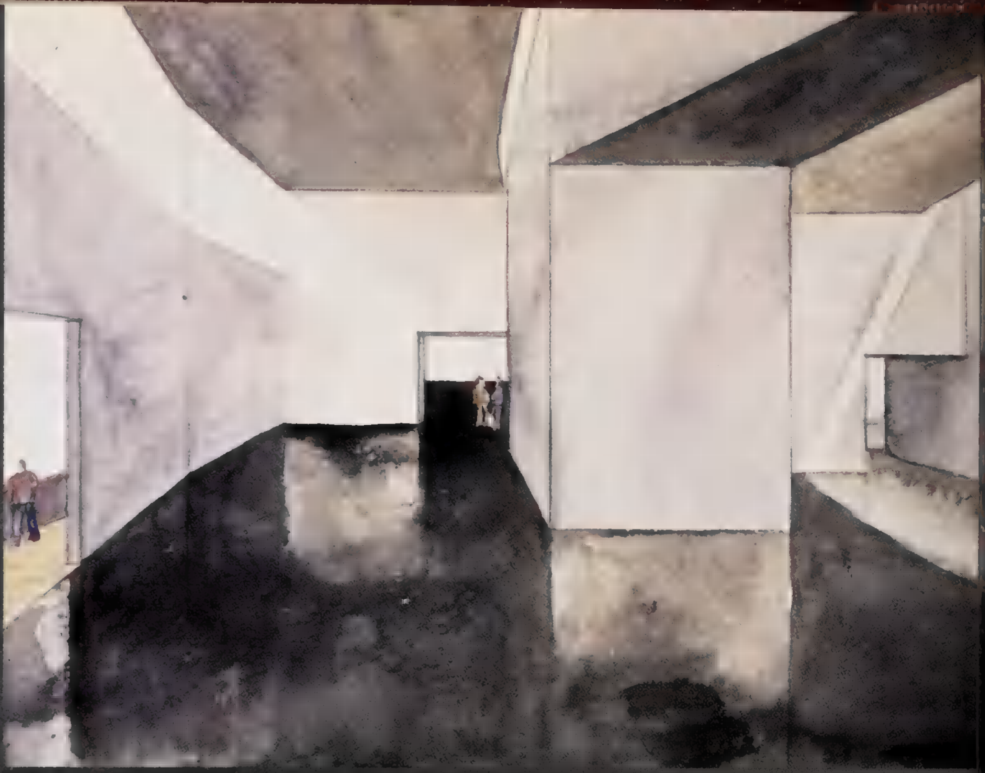
The Forum unites the ground-floor functions and acts as a vertical organizing element for the museum (plans). The visitor follows a corkscrew path up and around it. A glass-clad stair carries viewers up to daylit top-floor galleries and the outdoor Court of Light.

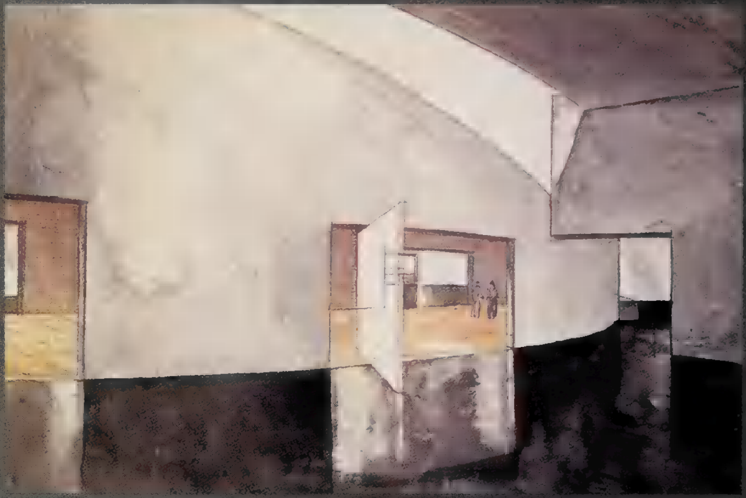


A curving, glass-plank enclosed stair (shown on page 90) opens to the elliptical enclosing walls of the Court of Light (left and below). In this serene outdoor room, roofed only by sky, edge-city distractions fall away.

PAUL WARCHOL (TOP)







Holl's evocative dreamscape comes to life

I grew up in Bellevue waiting to get out. The sameness of its subdivisions and shopping centers seemed to stretch endlessly, and the interchangeable fathers all worked at Boeing. We derided it as "the Void" or "Blahview" as we raced our teen jalopies across the bridges floating on Lake Washington to the real city whose spires beckoned to us: Seattle. Times change, and Bellevue has become, well, *interesting*, even diverse.

Though it has the traffic-clogged freeways hugged by reflective glass mid-rises, Bellevue is not entirely like other suburban business centers that, driven by real-estate industry imperatives, flow heedlessly over vast landscapes. What was, in the early 1950s, little more than a gaggle of summer houses and blueberry patches has consciously attempted to forge its own sense of place, even as its population has moved into the hundreds of thousands. Bellevue is ahead of most of its edge-city brethren, perhaps because it is so acutely aware of the competition, especially in the form of Redmond, the next suburb outward—the place Microsoft moved to. And Bellevue has always had the urge to compete with thriving Seattle. Its cluster of high-rises, for example, emulates Seattle's soaring downtown towers.

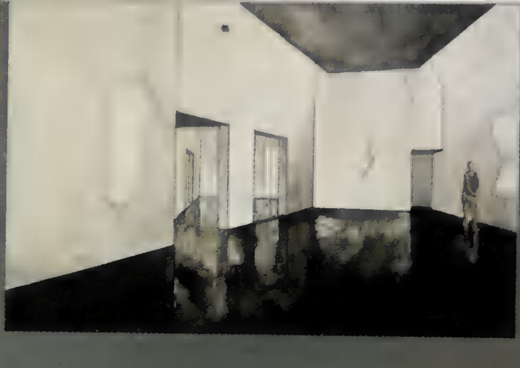
The summer arts fair from which the museum sprang always mixed in just enough avant-garde-aspiring art to lend regional legitimacy, without going so far as to upset comforting expectations too much. People don't live in Bellevue to have their values upended or their sense of themselves deeply disturbed. They expect to control the environment in which they live, and they do.

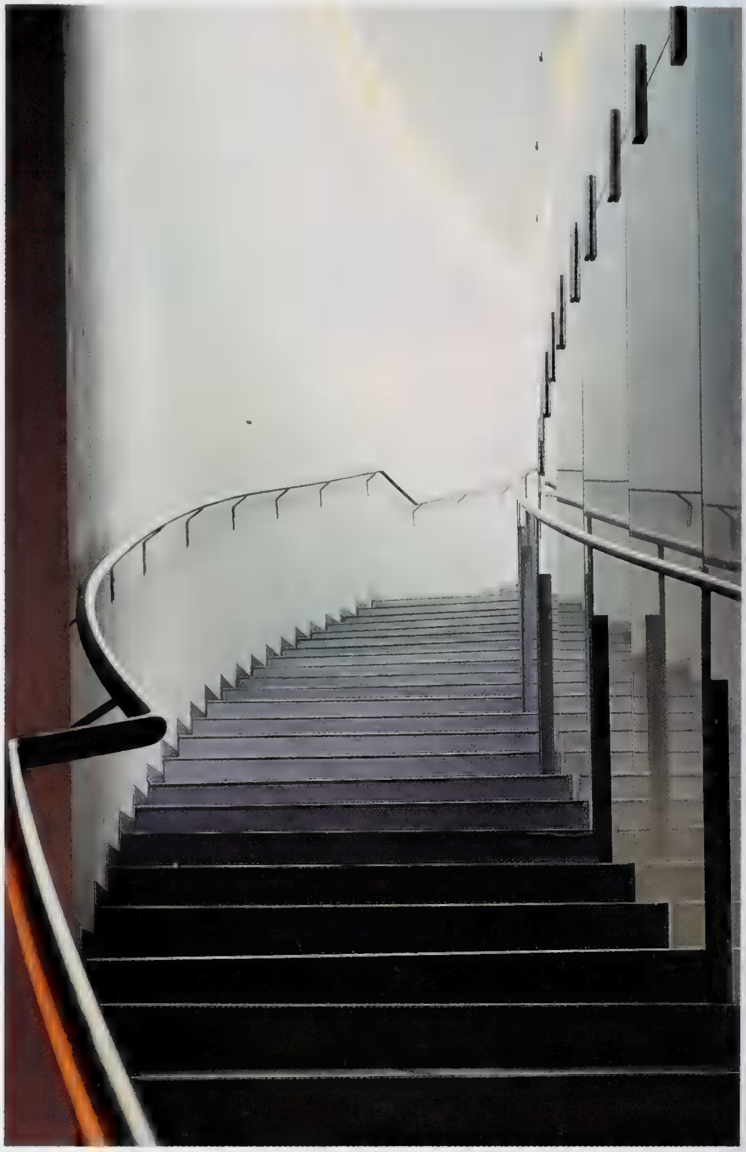
Curator Brian Wallace is keenly attuned to these values in the way he organizes exhibitions. "I try to make group-show themes that are accessible," he says. He mixes local artists' work with that of established national and international figures. The video and electronic work on display answers another agenda item, "to connect art and science" in this hub of high technology.

Moving the facility out of the Bellevue Square Mall was an important step toward self-respect as an institution, but its leaders recognized that a real work of architecture could be more than mere walls for paintings. In Holl's building, I suspect Bellevue got much more than it bargained for. To me, the red elevations read as pulsing living innards revealed when the polite metal edges of the building were "sliced" off. The drawings on these pages show portals, spaces to consider exploring, paths that one might regret not taking. Light comes through oculi from mysterious, perhaps heavenly, sources. The floor underneath is icily reflective. Is that patch of light the solid, and the dark a void into which I will sink?

In the Forum, and in the ever-changing experience of moving through the building, Holl has managed to retain much of the dreamscape quality so hauntingly evoked in his drawings. The stair to the third-floor galleries, for example, is tight, yet glowing with light. You might have entered some tubular living organism that seems to expand and contract like a lung. Then you emerge into the galleries, which, with their gentle curves and attenuating heights, suggest the spiritual calm of a chapel.

Bellevue accidentally went over the top. The suburban grip of hyper-control has loosened. The "subject" here is emotional and psychological rather than just tactile. It's a rarity not only in places like Bellevue, but in architecture. And the museum's leaders have created something extraordinary that will reward (if not answer) the questions aroused in an inquiring mind. *James S. Russell, AIA*





"We wanted to go beyond the hermetically sealed white box," she says.

The inaugural exhibition showed a not-yet-fully-negotiated relationship between building and art. Blackout curtains were drawn in the south gallery for the inaugural video installation, obscuring Holl's intention. Since the museum is wired for digital shows, this will happen again in the future.

The most successful gallery for viewing art is the north gallery, with its high band of translucent clerestory windows that trace the exterior wall as it creases and angles down to the west. The orchestration of light, along with the subtle bend of the gallery, creates a space that resists revealing its exact size and shape. Oblique views through galleries and windows and across courtyards present themselves in a changing series of perspectives.

In these derivative times, the authenticity of Holl's personal vision is powerful and may challenge BAM's budding artists to chart their own course. Together, Holl and BAM are united in their faith in the transformative powers of art. While the museum seeks to unlock the inner artist, Holl hopes viewers will see architecture as an urban amenity, one that is beautiful even as it connects people—a first step in the utopian transformation of an edge city. Whether or not such aspirations are realized, BAM is a luminous drop of inspiration. ■

Sources
PVC Roof: *Sarnafil*
Exterior concrete color additive: *Custom, added to clear OKON sealer*
Interior concrete color additive: *Solomon*
Exterior storefront and glazing: *PPG; Northwest Industries*
Glass planks: *Pilkington Profilit*
Terrace pavers: *Westcon pavers over Hydrotech roof system*
Interior plaster: *Structo-lite*

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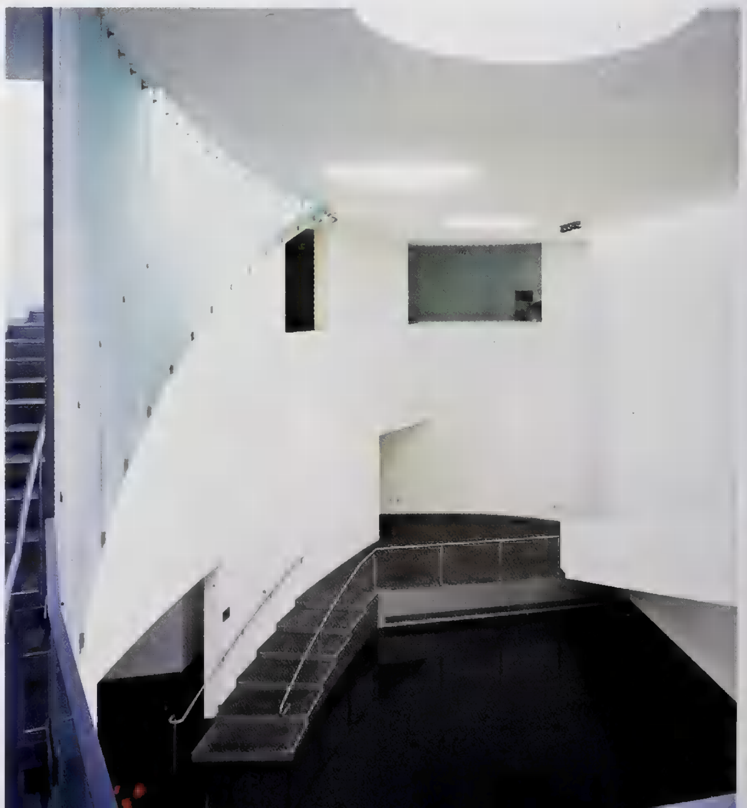
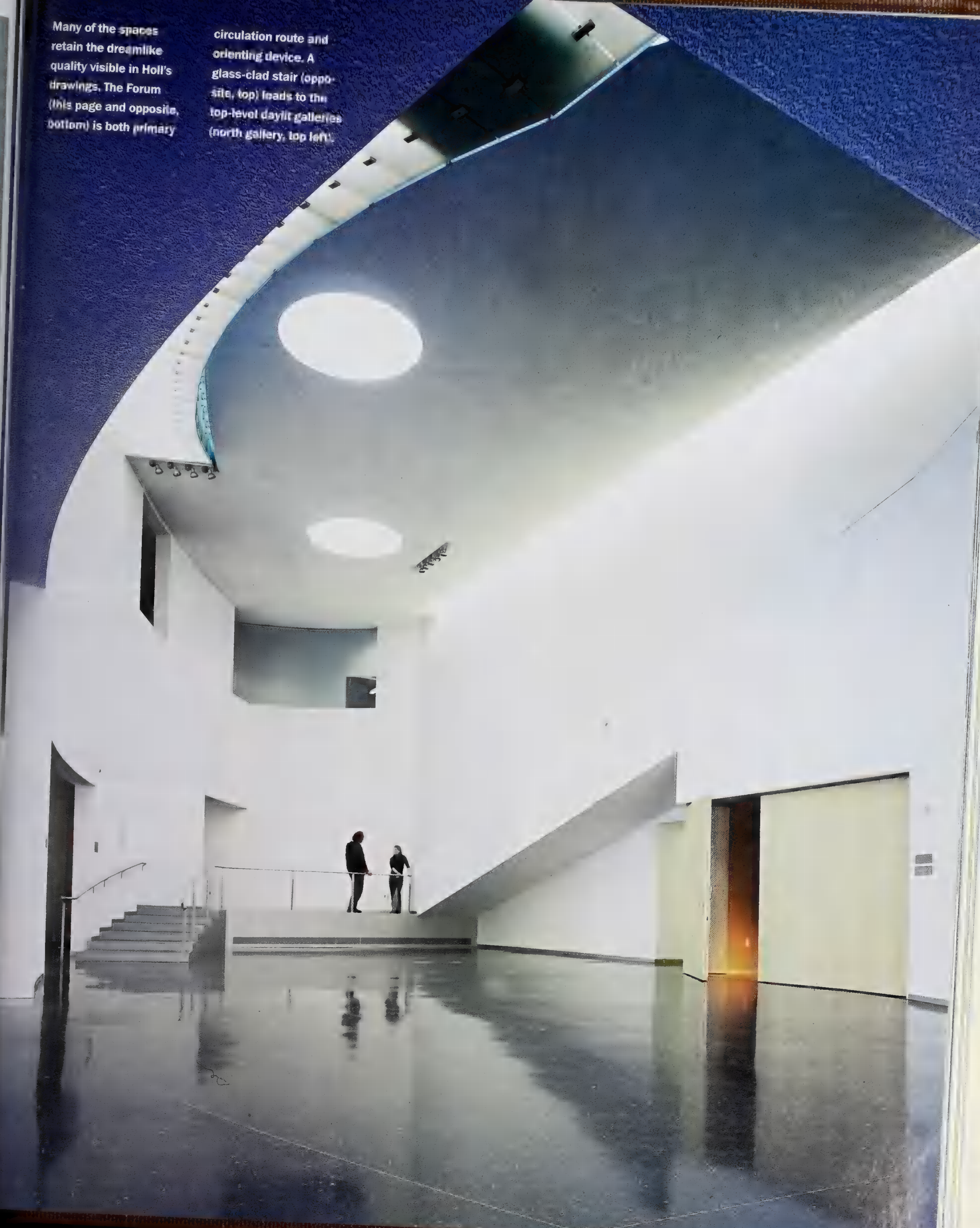
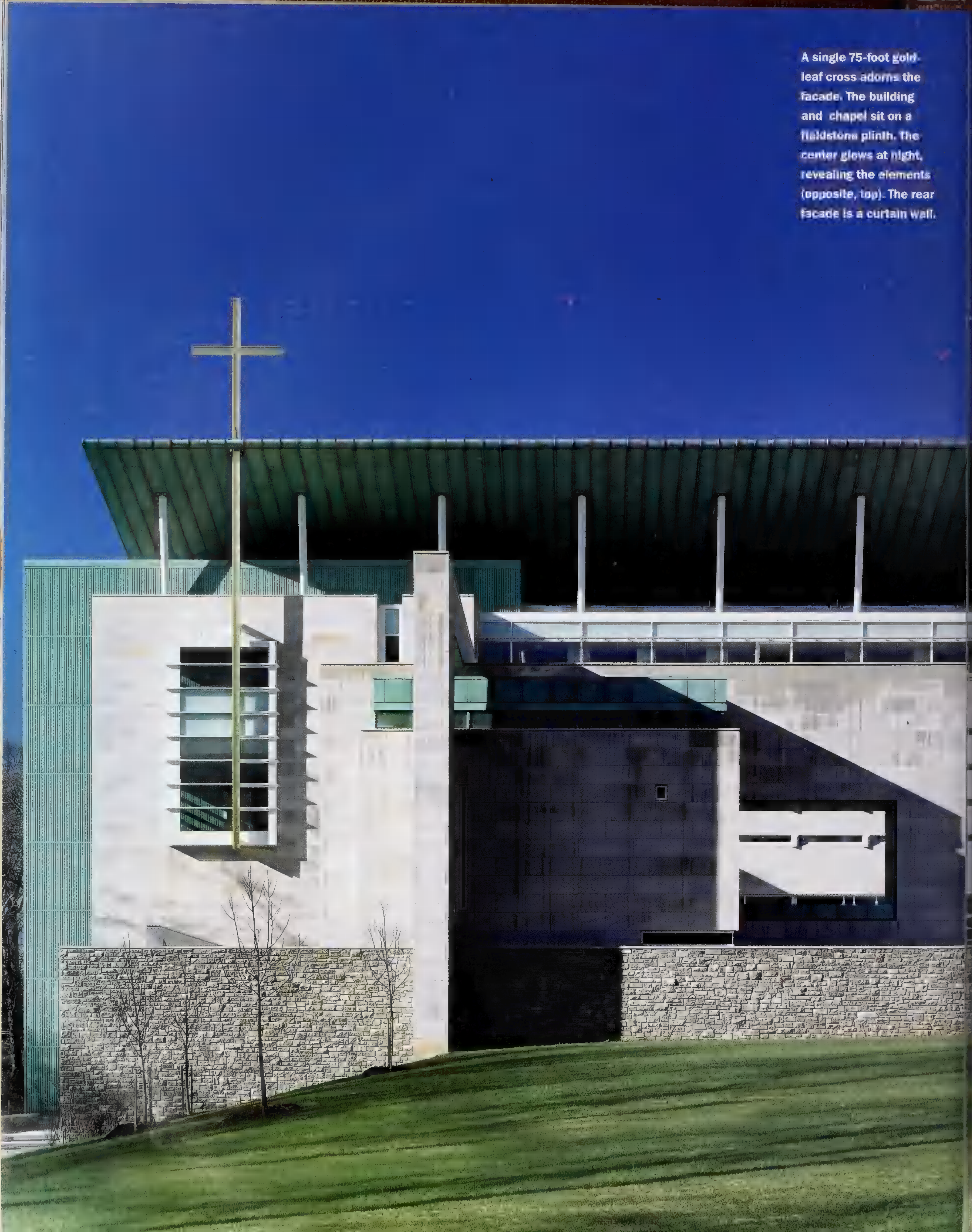


PHOTOGRAPHY: PAUL WARCHOL

Many of the spaces retain the dreamlike quality visible in Holl's drawings. The Forum (this page and opposite, bottom) is both primary circulation route and orienting device. A glass-clad stair (opposite, top) leads to the top-level daylit galleries (north gallery, top left).

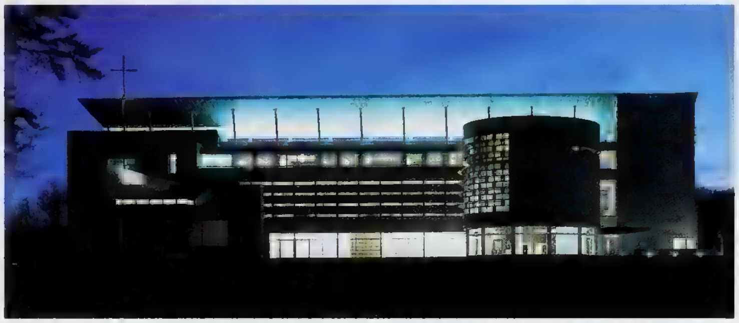




A single 75-foot gold-leaf cross adorns the facade. The building and chapel sit on a fieldstone plinth. The center glows at night, revealing the elements (opposite, top). The rear facade is a curtain wall.

Leo A **Daly** delivers ecumenical elegance and grace to the nation's capital with the new **POPE JOHN PAUL II CULTURAL CENTER**

By Sara Hart



Washington, D.C., has not lived up architecturally to the ambitious master plan that Pierre L'Enfant conceived for the nation's new capital. Grand boulevards radiating from the U.S. Capitol demanded grand buildings. With the exception of a few pleasant Neoclassical homages to democracy, grandeur is conspicuously absent from the urban fabric. Indistinguishable, squat concrete-and-marble-veneered blocks have hatched along the avenues, creating a relentless monotony to which critics seem resigned.

Finally, however, Washington has received an architectural transfusion from an unexpected source—the Catholic Church—in the form of a quasi-religious cultural center honoring Pope John Paul II, designed by the Washington office of Leo A Daly Architects. The firm is one of the five largest architecture and engineering firms in the U.S., and often plays a supporting role as executive architect on many projects. With the Pope John Paul II Cultural Center in northeastern Washington, D.C., the firm raises its own design standards, along with the city's.

The design team developed a close working relationship with Cardinal Adam Maida, archbishop of Detroit and close adviser to the pope. It was Cardinal Maida, president of the Pope John Paul II Cultural Foundation, who envisioned the center and raised $65 million through private donations to build it. The journey from their initial meeting until the official opening in March spanned a decade.

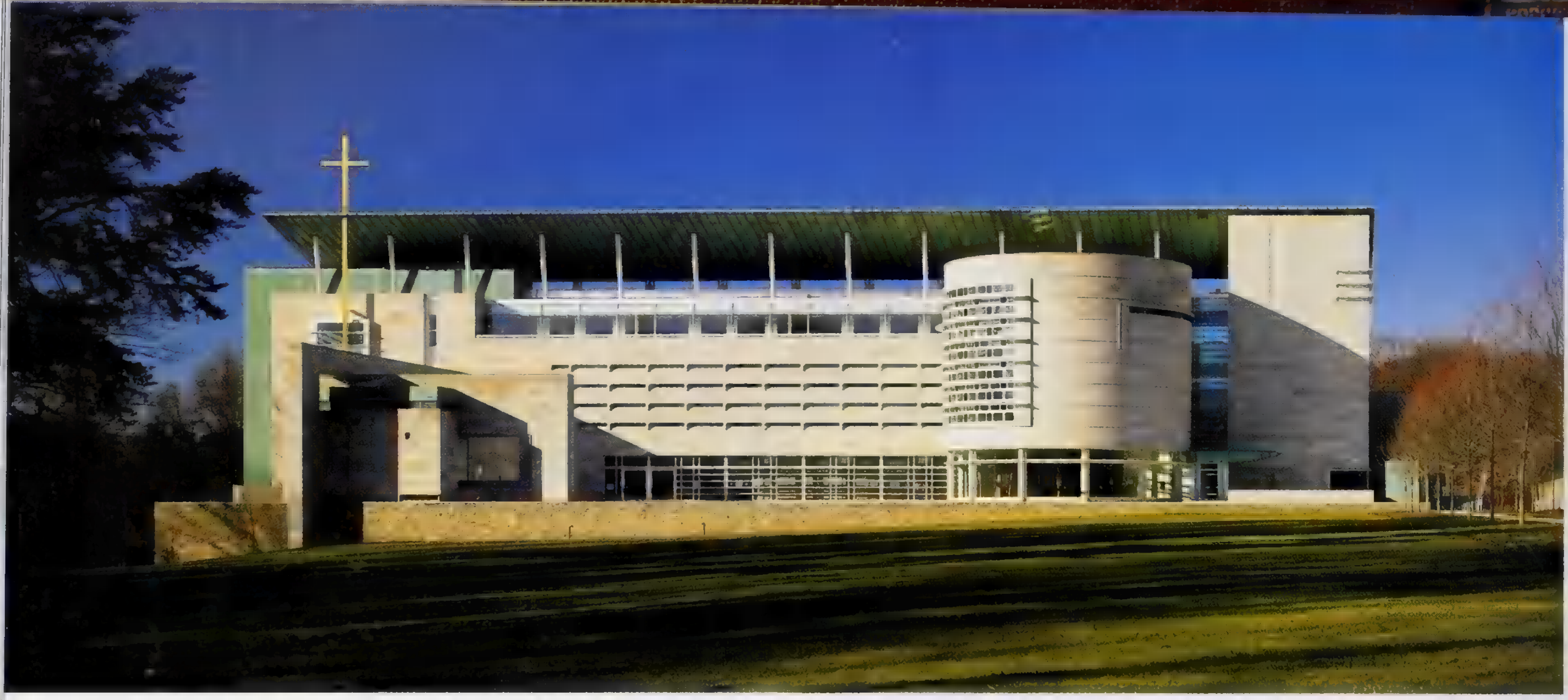
In the beginning, the client envisioned a center modeled after a presidential library. Such institutions are built to document historical events and archive the achievements of an administration, as well as pay tribute to an individual president. And yet, this was not to be a moribund archive or static museum. Instead, client and architect envisioned an unusual hybrid of old-school exhibitions featuring Vatican artifacts; state-of-the-art interactive explorations; hands-on activities for all ages; an interfaith think tank; and a chapel. Furthermore, Maida and the pope wanted to present the Catholic Church and the papacy in an ecumenical environment to emphasize inclusion of and respect for all faiths.

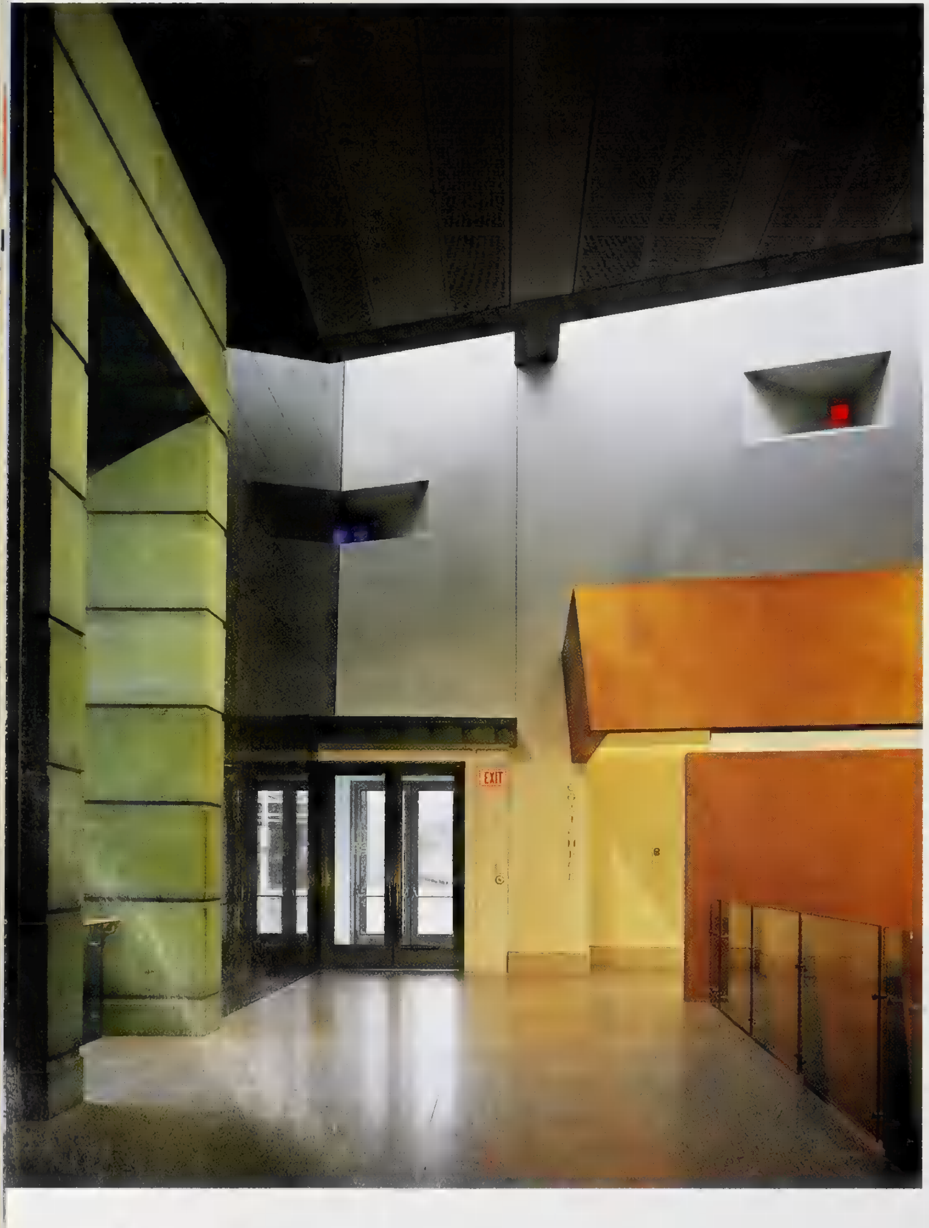
As expected, pressure came from traditionally minded clergy and foundation trustees to imitate the ecclesiastical vocabulary of domes and marble arches, not unlike those of the Byzantine-Romanesque dome and bell tower of the basilica of the National Shrine of Immaculate Conception, which looms above the treetops nearby. The design team lobbied convincingly for a modern architectural vocabulary, rendered in traditional materials, to present a forward-looking church—a building that was monumental but not imposing, respectful but not solemn, and, most important, one that emphasized the perpetuity of the church.

Visitors reach the building via a tree-lined drive along the north edge of the 12-acre site. Such a ceremonial approach, normally reserved for monuments on Washington's Mall, emphasizes the significance of the center and creates anticipation and excitement for the experiences to come. The front facade, an asymmetrical composition of glass and limestone, is anchored at the north end by a 40-foot-tall entry rotunda and at the south by an elegant cubic chapel, which reposes over the edge of a long reflecting pool. All of these elements sit upon a granite terrace, raised upon a rusticated fieldstone plinth. The structural columns emerge from the interior through the top to hoist the patinated copper-clad roof that bends upward like a bird's wing.

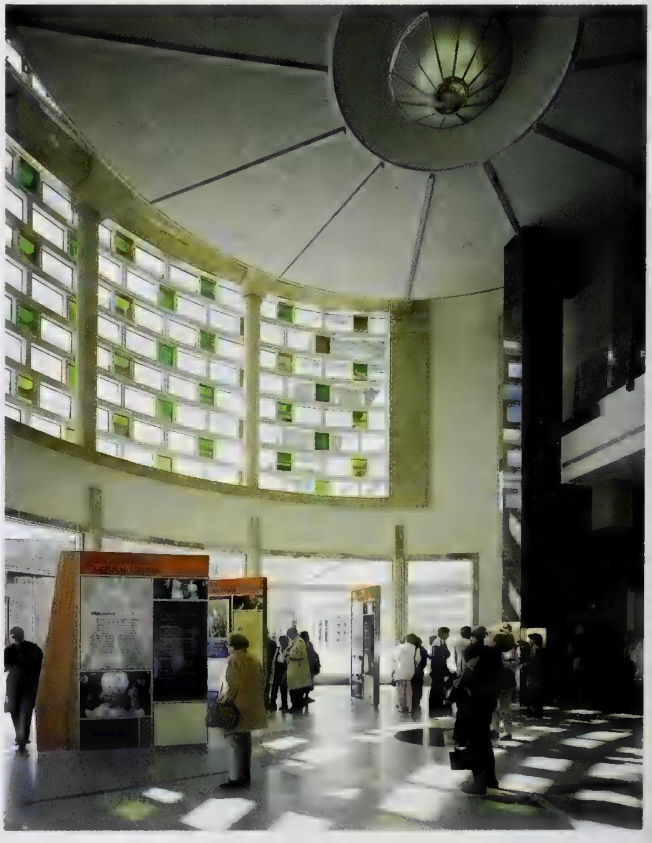
The interiors are animated with light, sights, and sounds, in contrast to the hushed solemnity of most religious institutions. Visitors move vertically through the museum via sloping concrete walkways that create a vertical slice through the building's core, which is flooded with light through the rear curtain wall. Because the openings between the steel stanchions that support the railings are glazed, visitors can see

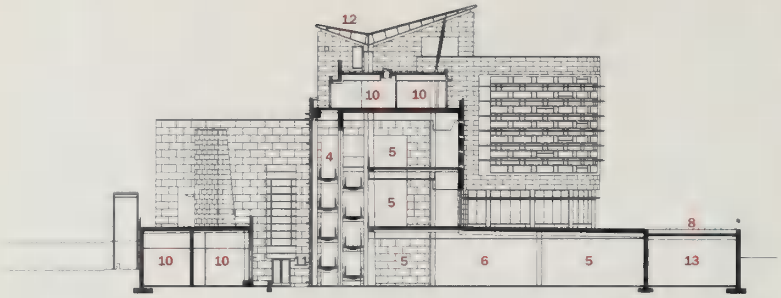
Project: *Pope John Paul II Cultural Center*
Architect, engineer, interior designer: *Leo A Daly—Leo A. Daly III, FAIA, Michael Winstanley, AIA, Al O'Konski, AIA, Lori Arrasmith, AIA, Adriana Radulescu, Assoc. AIA, Ellis Whitby, Kourush Afsharjavan, Tina Bushee, Richard A. Clarke, AIA, F. Kelan Dyer, AIA, Vernon Geisel, AIA, Timothy Grandy, AIA, Kelly Hogg, Robert Osborne, Craig Wright*
Exhibits: *Edwin Schlossberg*
Landscape: *Michael Vergason Landscape Architects*
Contractor: *James G. Davis Construction Corporation*





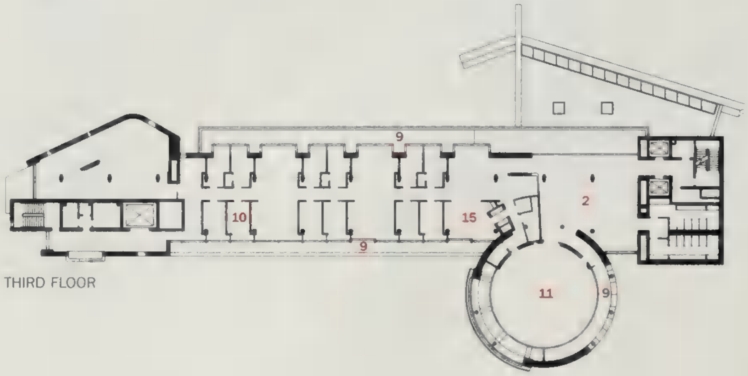
Visitors enter the center through a large rotunda (above). The glass panels (below right) will eventually be replaced with stained and art glass funded by donations. The dominant interior materials are concrete, copper, glass, and granite (below left). "Light cavities" with colored glazing reveal thick walls meant to suggest an enduring Church. Primary circulation is a series of eight sloping walkways with glass sides (opposite).



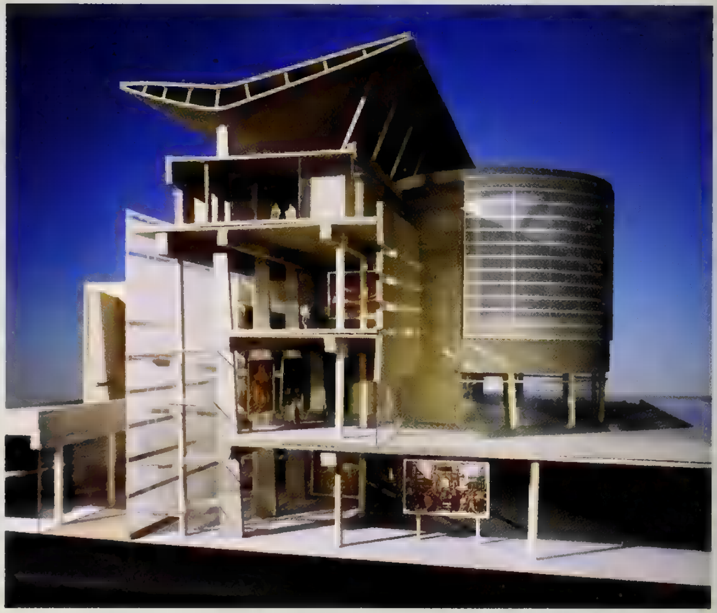


SECTION A-A

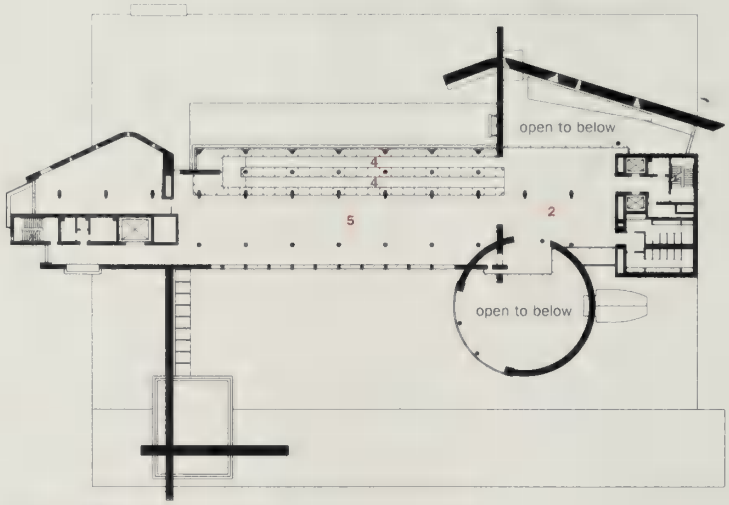
The sectional model (below) describes the vertical organization of the building. The section (left) shows the relationship of the sloping walkways to the exhibition spaces. Heights are generally 20 feet from floor to floor.



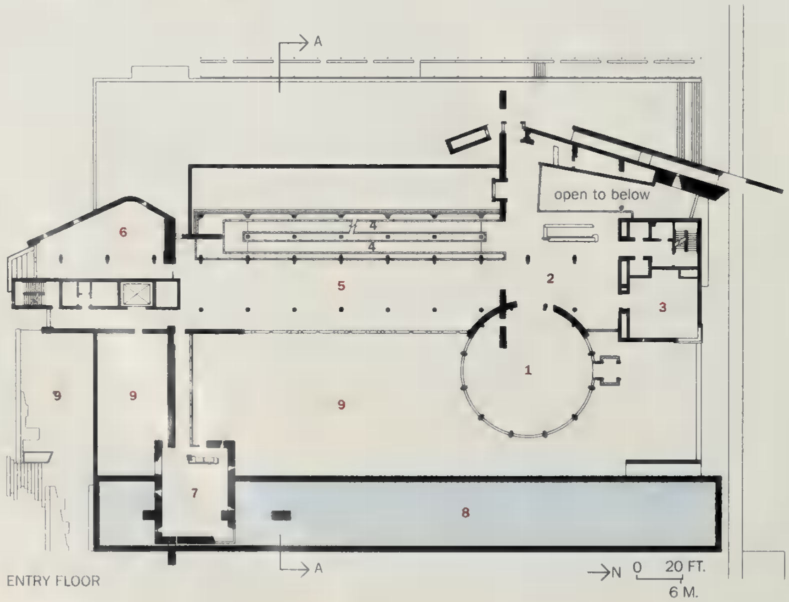
THIRD FLOOR



1. *Entrance*
2. *Lobby*
3. *Gift shop*
4. *Sloping walkways*
5. *Galleries*
6. *Gallery of papal history*
7. *Chapel*
8. *Reflecting pool*
9. *Terrace*
10. *Intercultural forum offices (typical)*
11. *Boardroom*
12. *Copper-clad roof*
13. *Storage*

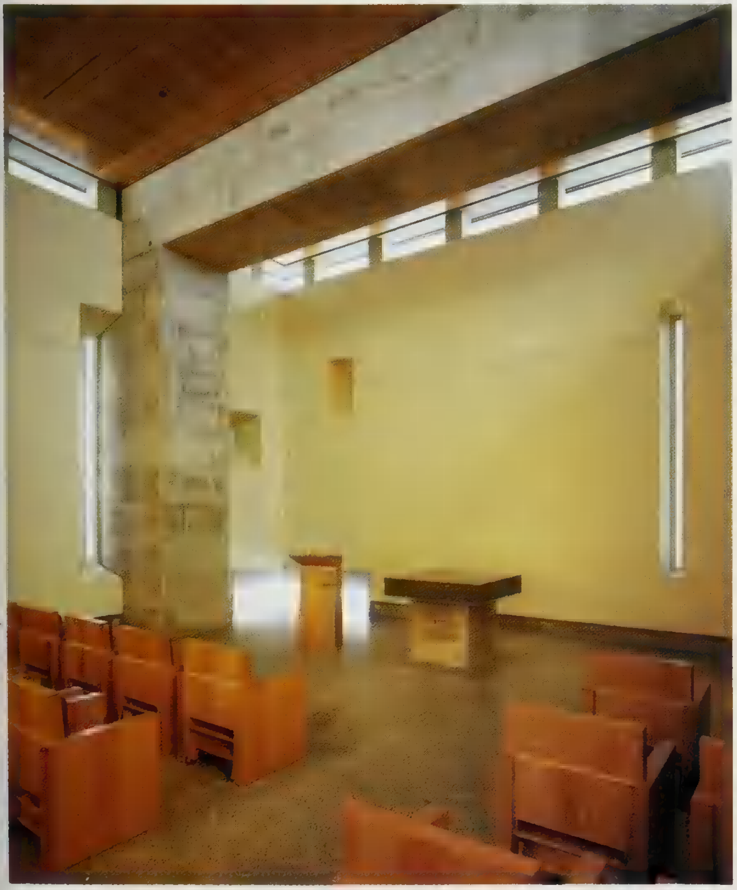


SECOND FLOOR



ENTRY FLOOR

The top floor is occupied by the Intercultural Forum (right), where 16 visiting scholars, representing many faiths, will do research, write, and lecture. Leo A Daly Architects designed the chapel furniture (below) and the benches throughout the building. Gold dust sprinkled in the plaster walls reflects light that enters through an unorthodox composition of windows.



into the galleries above and below the walkways.

The basement level is the most robust, with the orientation theater and an astonishing variety of multimedia and interactive activities designed by New York–based Edwin Schlossberg Incorporated (ESI). ESI is a multidisciplinary company whose exhibit designers, space planners, inventors, and computer programmers study human interaction, and design for how people respond in the evolving era of multimedia, interactivity, and virtual reality. Daly recruited ESI early on as a design team member to make certain that the sophisticated interactive areas interface seamlessly with the architecture. (To view ESI installations, go to www.architecturalrecord.com.)

The success of this project really boils down to how well the architect put the church's message into the architecture. Secondary details and ornamentation are minimal. Light and sound create an atmosphere of inclusion and participation, while large expanses of concrete, granite, and stone speak for theological continuity. In a few bold moves, Daly has restored faith that modern architecture can carry a complex message, whether sacred or secular. ■

Sources

Limestone: *Lorton Contracting, Bybee Stone*

Curtain wall: *LBL Skysystems*

Copper: *Revere Copper Products & Manufacturer, Prospect Waterproofing*

Glass: *Viracon, Bendheim Architectural Glass*

Lighting: *Lytespan Nessen, Sharper, Leucos USA, Lightolier, Lithonia, Rambush (interior), Hess America, Bega, Lumiere, Forum (exterior)*

Furniture: *Knoll, Thomas Moser, Craftwood, Wilkhahn*

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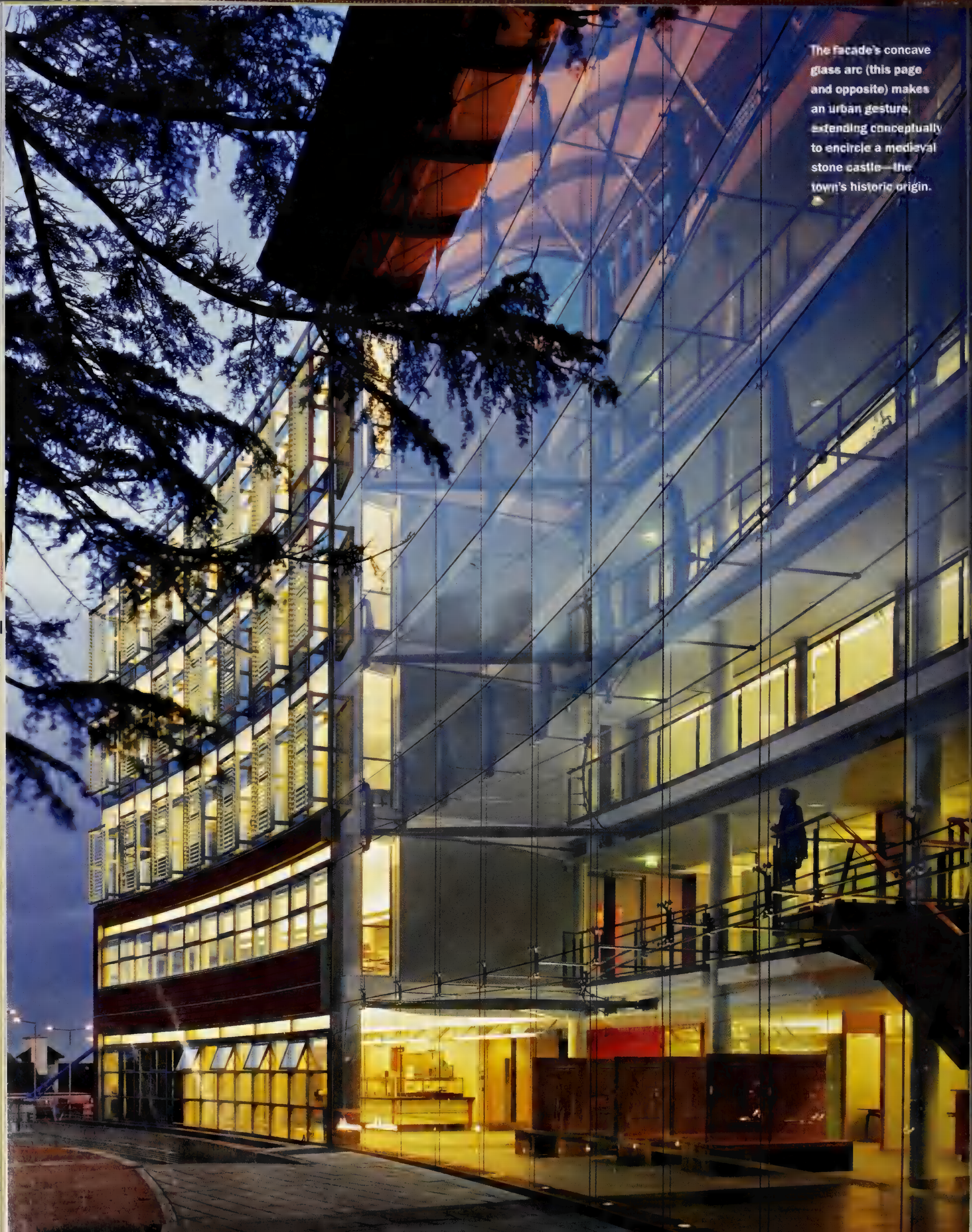


The facade's concave glass arc (this page and opposite) makes an urban gesture, extending conceptually to encircle a medieval stone castle—the town's historic origin.

With its **FINGAL COUNTY HALL** **Bucholz McEvoy Architects** signals Ireland's new role in a global society

By Raymund Ryan

Ireland is undergoing seismic change as it participates in a global economy and culture. On a recent bus trip to Swords, en route to Fingal County Hall, the driver—with reflective shades and an embroidered baseball cap—was of Southeast Asian origin. Several passengers were from Africa, and two others were reading in French. As they passed the international computer facilities and sprawling new shopping centers of Dublin's suburbia, these passengers may have been unaware of Ireland's traditional homogeneity and poverty. The country now boasts one of the highest per capita incomes in Western Europe.

Ireland's economy has opened up to embrace financial services and information technologies with zeal. MIT's media lab, for instance, has now launched its first foreign outpost in part of Dublin's famous Guinness Brewery. The word *globalization,* so often used to describe today's transnational economy, can be associated correctly with the dissolution of local culture and power. But globalization may also lead to a fuller comprehension of architectural objects and institutions. For an architect to act "globally," in this positive sense, implies contemporary understanding of a building's full economic and environmental context, a knowledge and promotion of building as a complex system of parts.

As the Irish capital expands well past its 18th- and 19th-century core, county Dublin (home to approximately one-third of the Republic's 3.5 million citizens) has been reconfigured into four constituent administrative units. Fingal occupies the northern zone near Dublin Airport, rich in agricultural land mingling with a new landscape of call centers and high-tech facilities. Swords, the county seat, is a market town with its medieval character intact—a healthy, if provocative, site for a major

Raymund Ryan, coauthor of Building Tate Modern *and author of* Cool Construction, *was Irish Commissioner for the 2000 Venice Architecture Biennale.*

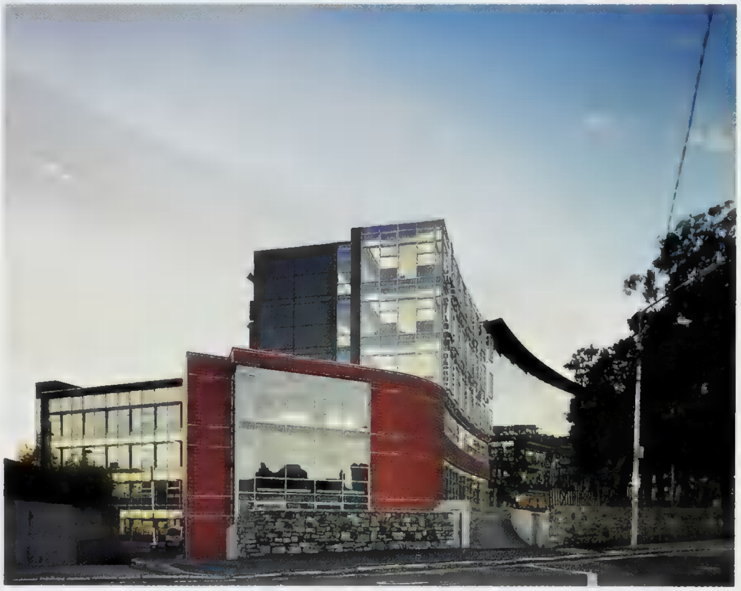
Architect: *Bucholz McEvoy Architects—Karen McEvoy, AIA, Merritt Bucholz, partners-in-charge and project designers; Jim Luke, Graham Petrie, Mary Louise Kelly, project team; Karen McEvoy, Merritt Bucholz, Jim Luke, Pamela Sams, John Fitzgerald, competition team*

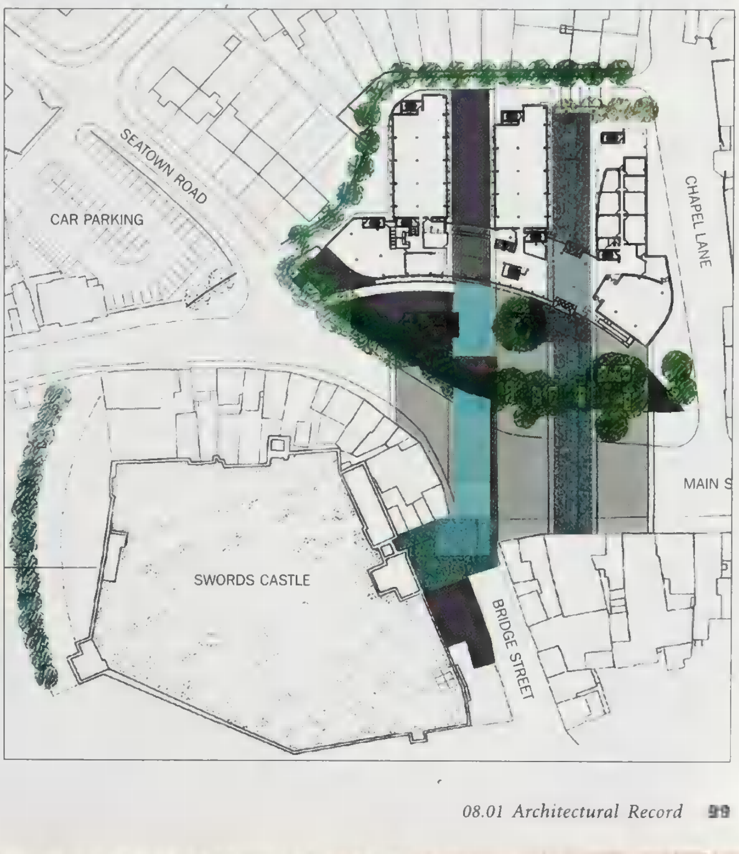
Associate architect: *BDP Dublin—Donal Friel, partner-in-charge; Mary McDonald, project architect; Dierdre Prince, Sabine Klingner, Gerard O'Sullivan, Elaine Butler, Richard Byrne, project team*

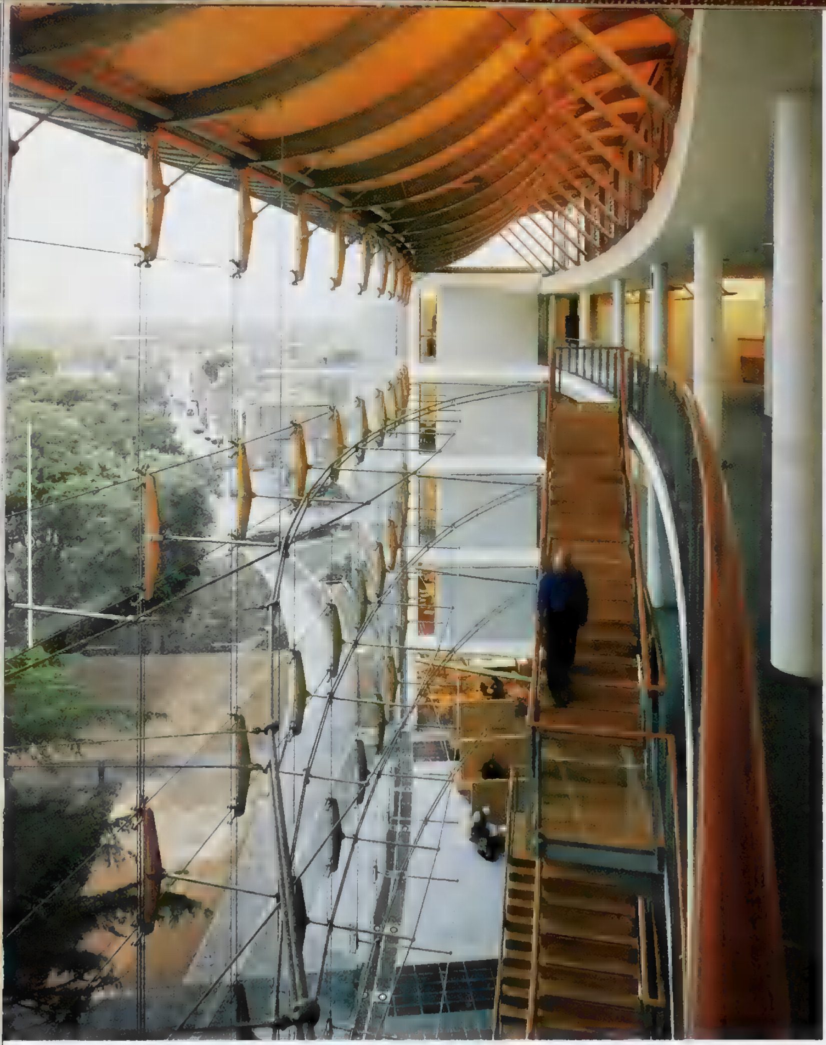
Engineers: *RFR France*

General contractor: *PJ Hegarty & Son*

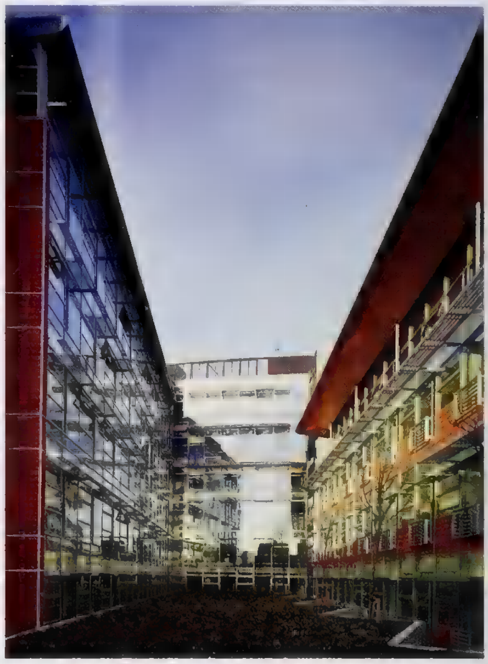
Consultants: *Sandy Brown (acoustical)*

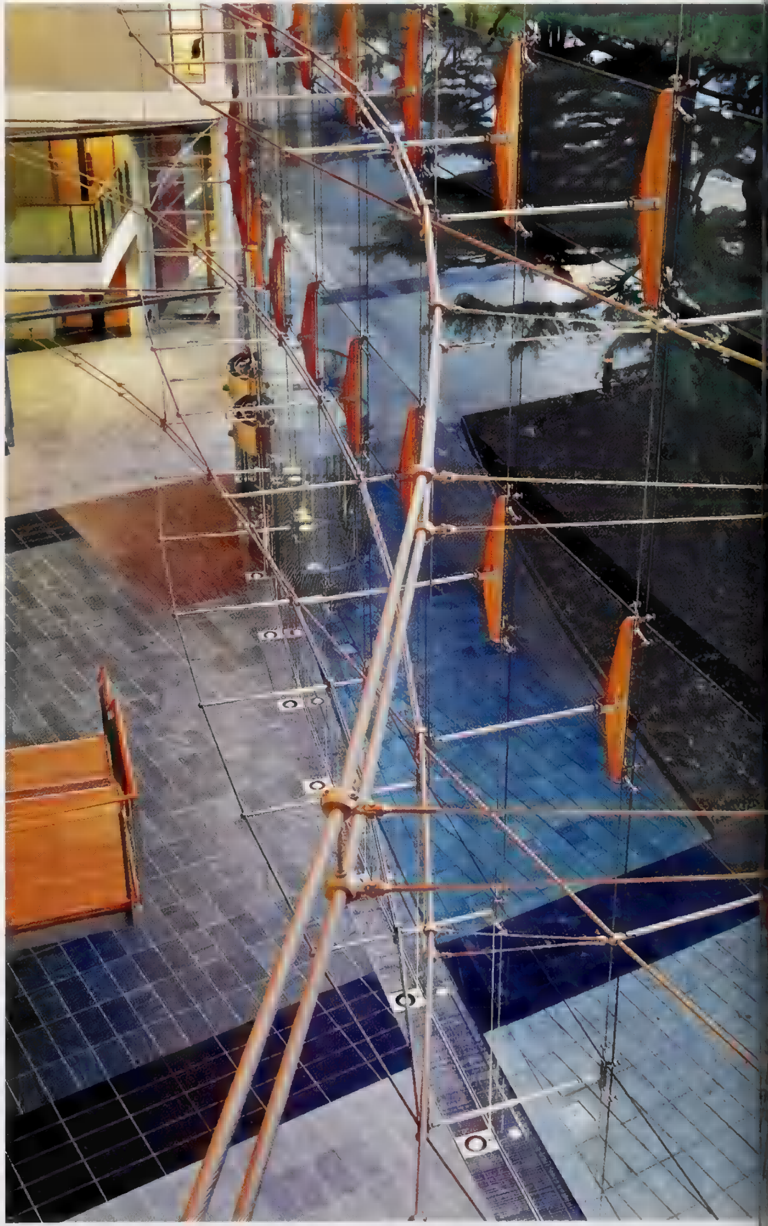






Light in appearance, the foyer's arcing glazing hangs curtainlike from the roof. (It actually moves if pushed by hand.) Each pane attaches to the one above it by an oak spar. The entire structure is held in place by a fine web of concave and convex steel cables (left, below, and opposite). In the office wings (right), brises-soleils shade extensive glazing. Service cores occur where these wings join the main arc.



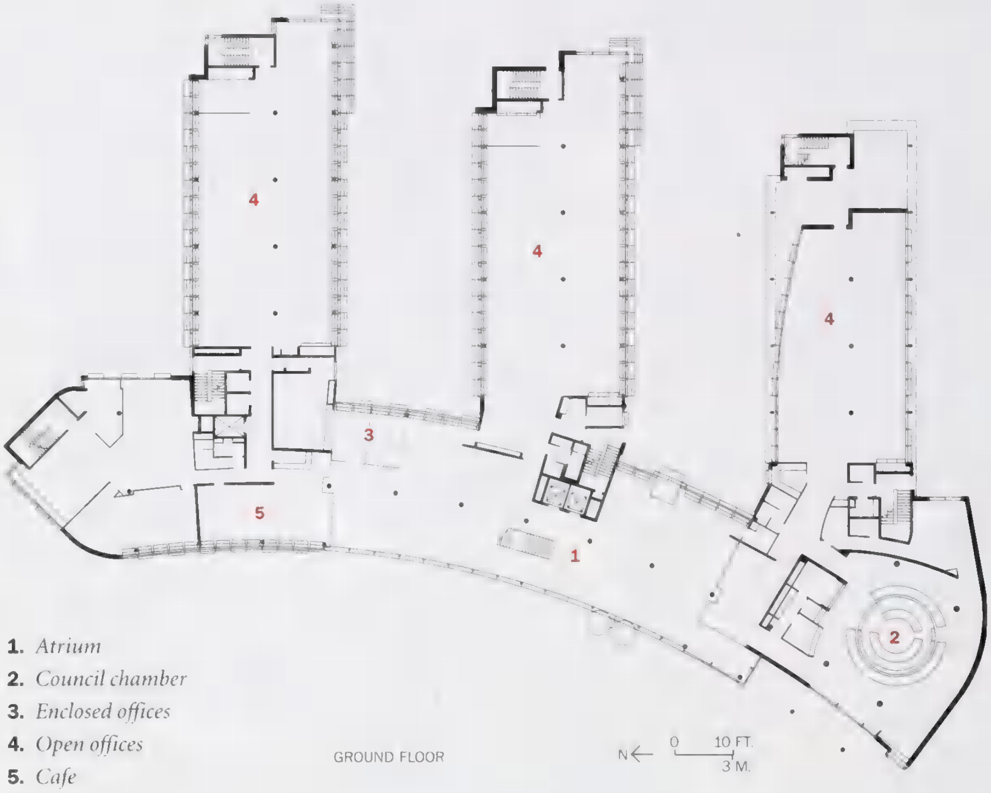


contemporary building. Fingal County Hall must simultaneously connect with its immediate historic neighbors and stand as a symbol of Irish democratic progress. It's the clearest example yet of a critical architecture to accommodate and signal Ireland's new role in a global society.

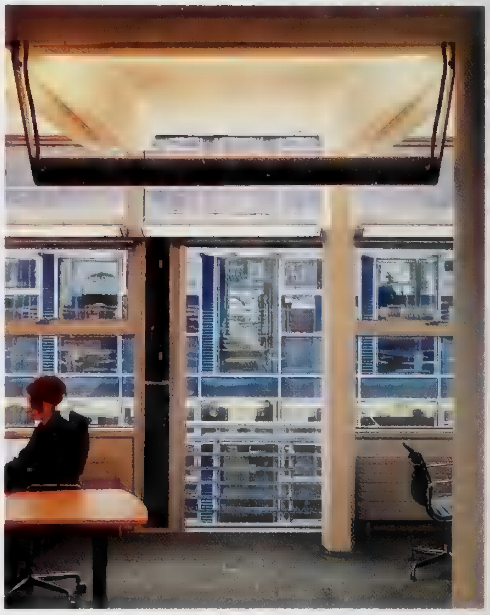
Merritt Bucholz and Karen McEvoy, AIA, won the open design competition for Fingal County Hall in 1996. The young American-Irish duo, who met at the New York office of Emilio Ambasz, had until then never built in Ireland (Bucholz had received his M. Arch. from Princeton only the year before).

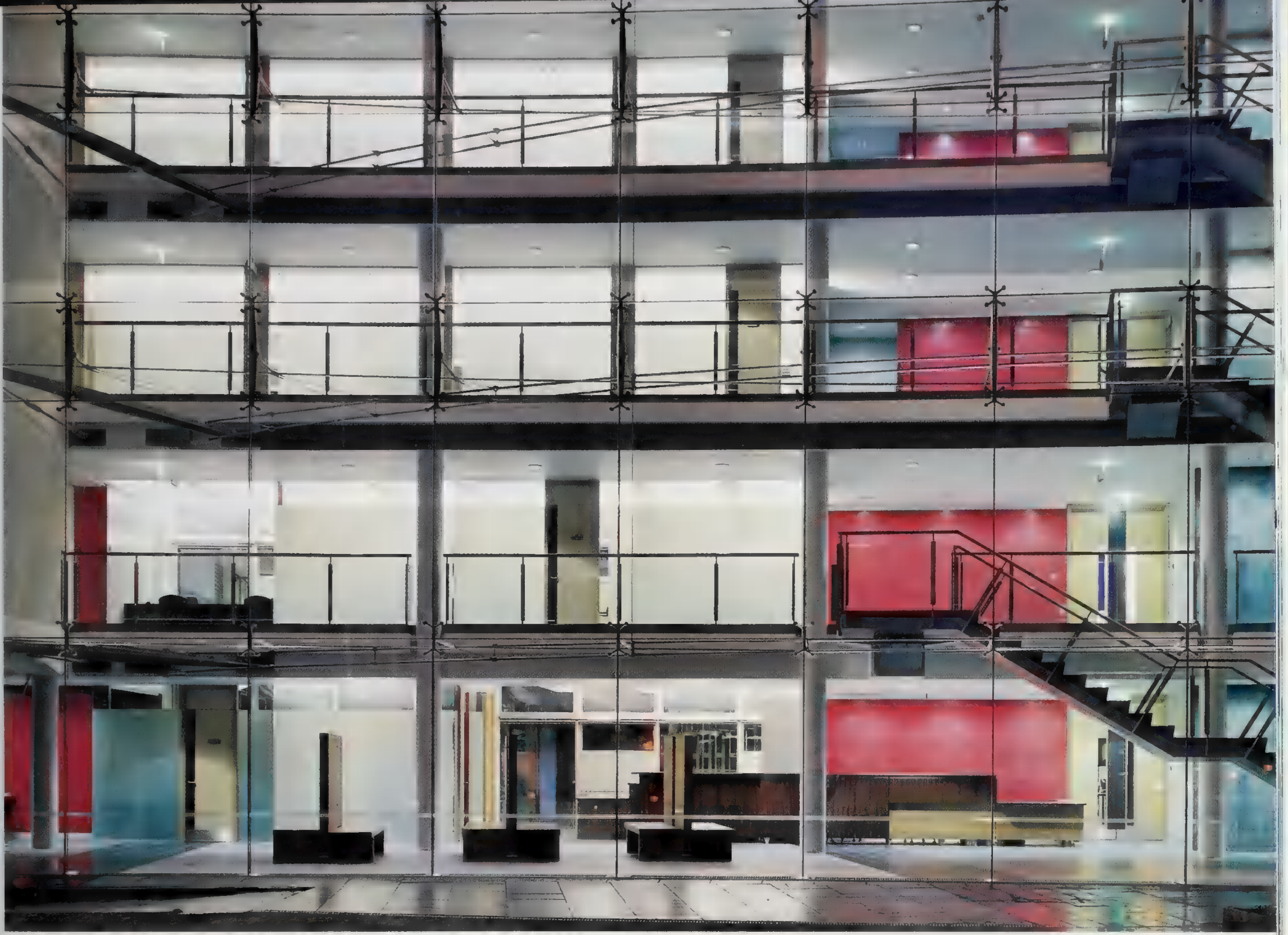
Their Fingal County Hall is unmistakably modern. It is also a fragment—one component in a spatial procession at an urban scale. The public front is a concave glass arc that conceptually extends across a main street to encircle a medieval stone castle—the town's historic origin. This glass screen reflects and is protected by mature evergreen trees that have been carefully retained. Linear strips of green slate paving, gravel, and plantings lead from the castle gate and public street under the canopy of trees into a four-story foyer toward the center of the arc. Although landscaping elements that will extend the circle about the castle grounds have yet to be implemented, the entire panorama of Swords seems encompassed from the upper stories of County Hall.

Distinct from more established Irish practices, Bucholz McEvoy approaches construction with an attitude akin to industrial design and attuned to issues of sustainability. At Fingal, the glass facade and foyer present the clearest example of this intent. Fabricated in Italy, the glass hangs from the roof like a curtain. (It actually moves if pushed by hand.) Each glass panel connects with the one above it by a timber spar. The entire structure is held in place by a fine web of horizontal steel trusses that project into the void of the foyer: Engineering as a dynamic form of



Designed as an environmentally attuned workplace, the building—in its office spaces (below), council chamber (bottom), stairwells (opposite), and foyer—receives generous, but well-modulated, daylight.





ornament. The foyer, furthermore, is ventilated naturally. Hot air or smoke rises to be expelled at the clerestory. The roof is a double-curved steel structure clad on the interior in birch plywood.

The central 110-foot-long facade was designed in collaboration with Paris-based engineers RFR. (Unfortunately, the late Peter Rice, RFR's Irish-born founder, did not live to see a commission in his homeland.) Toward the north end of the foyer is a public cafe, and to the south the council chamber. The more public or important offices, faced on the exterior in small terra-cotta tiles, rise above these spaces (along with an employee canteen). A strip of skylight helps illuminate the double-height council chamber as it protrudes beyond the main building volume. Views out to the street are through tall oak louvers that can be closed for sun protection or, presumably, if council proceedings become too heated.

Most of the 450 employees work in three linear wings accessed from corridors connected to the foyer by cantilevered stairways. The offices are typically open-plan with exposed ceilings of prefabricated concrete-slab modules. Light trays on the exterior and interior bladelike fittings bounce daylight and electric illumination up onto gently curved soffits. Service rooms occupy knuckles that connect with the foyer; and partitioned offices tend to be corralled near the eastern tips. The wings are sheathed in a variegated palette. Here, panels of glass and tile and anodized aluminum break down the building's scale as it nudges up against two-story houses behind it. Thin vertical panels, painted blue and green on the exterior, open for ventilation. For solar protection, the south-facing elevations have cantilevered aluminum brises-soleils.

All these components are dimensionally coordinated with one another. They have been ambitiously sourced by Bucholz McEvoy from a range of manufacturers across Europe. Fingal thus sets an example and offers a stimulus for Irish architects to think globally, to consider buildings not only from the scale of the city to that of the door handle, but also to seize the possibilities of new technologies.

Eighty years after independence, the Republic now acknowledges a history made up not from one unitary indigenous culture but from layers of immigration, emigration, and superimposition. While it may be excessive to claim that Fingal County Hall somehow represents all these characteristics, it nevertheless gives a clear signal of a new, open intelligence operating in the Irish scene. ■

Sources

Curtain wall: *Kawaneer, Pilkington*

Tile: *Eisenberg Terra Cotta Tile System (exterior), American Olean (interior)*

Glazing: *Polar Glass Systems (suspended glass facade)*

Doors: *Boon-Edam*

Hardware: *D-Line (locksets, hinges); Geze (closers)*

Plastic laminate: *Formica*

Stone: *Carlow Limestone, Welsh Green Slate, Welsh Black Slate*

Lighting: *Concorde, Marlin, Thorn; Delmatic (controls)*

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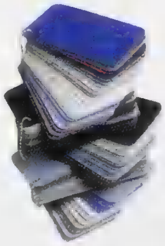

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CIRCLE 44 ON INQUIRY CARD

PLACES OF LEISURE

Playing to Win

SLACKERS BEWARE! RELAXING TODAY MEANS PLAYING HARD AND STAYING FIT. THE LATEST LEISURE FACILITIES ACCOMMODATE AN ACTIVE LIFESTYLE AND OUR NEED TO LOOK GOOD.

By Clifford A. Pearson

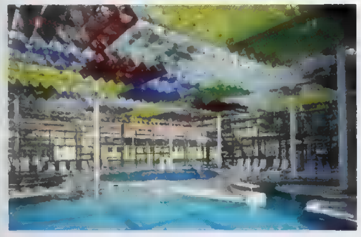
How do we relax? In a world of high-speed Internet connections, fast-paced business transactions, and high-altitude air travel, what we do to kick back says a lot about us. Although labor-saving devices once promised to set us free to enjoy the good life, we know better now: Microchips and megabytes have only made us busier than ever, so whatever time we steal to unwind is precious.

Like our lives, leisure time has become more active and more structured. Sitting on the porch in a rocking chair has been replaced by rock climbing and roller-blading. Work hard, play hard. All this can be seen in the kinds of leisure facilities we are building today. More often than not, these are places to break a sweat.

Driving much of this trend is a healthy concern for health. But there is more than a whiff of desperation (and vanity) in the Baby Boom generation's obsession with working out. As many of us settle into middle age, we seem more determined than ever to fight the inevitable forces of aging on our bodies. And there's a touch of guilt, too, in our filling spare time with activities that are good for us. As we juggle work and family responsibilities, we feel the need to justify what we do when there's nothing we really need to do. So instead of just relaxing, we bike 20 miles or go to that holistic meditation-through-suffering program because those activities promise to make us better people (and tighten our abs). The generation ahead of us isn't much different. Instead of letting up on life's gas pedal, many of our elders are staying as active as ever, expanding the market for all kinds of athletic and fitness facilities. Everybody wants to live forever (and have nice biceps).

Call it pampering with pain. The recent spa boom may best exemplify what's happening here. No longer places to just sit back and drink funny-smelling mineral waters, spas now offer an array of therapeutic treatments for mind, body, and spirit: early morning tai chi instruction, lung-challenging jogs in the woods, macrobiotic lunches, and master classes in the Zen of winning. According to the International Spa Association, the number of spas in the U.S. and Canada jumped from 1,331 in 1990 to 5,689 in 1999. In making 95 million visits to spas in 1999, Americans and Canadians spent $5.3 billion. Sports and recreation venues have experienced the same kind of proliferation, as a quick tour of almost any North American town clearly shows.

As developers of spas, health clubs, and sporting facilities expand their reach, they're learning that image counts. Their customers not only want to look good and feel better, they want their gyms and spas to look good, too. That's where architects come into the picture. ■



1.

Bad Elster, Germany

Behnisch & Partner sparks the revival of a historic spa with a set of colorful glass pavilions inserted within a 19th-century complex.

2.

Amiens, France

Using a system of curving steel ribs and glass panels, Chaix & Morel creates a soccer stadium that brings fan close to the action.

3.

East Hampton, New York

A recreation center by Davis Brody Bond provides attractive, well-lighted spaces for exercising both the mind and the body.

4.

Chicago, Illinois

DeStefano + Partners treats a driving range in a public park as a landscape feature, defining it with metal trellises that "dance" above the ground.

NEW: For 10 more places of leisure go to Building Types Study at ***www.architecturalrecord.com.*** The monthly expanded Web BTS features project descriptions, photographs, drawings, statistics, and links to people and products.

Spa Bad Elster
Bad Elster, Germany

1

GÜNTER BEHNISCH AND MANFRED SABATKE BRING A 19TH-CENTURY SPA UP TO DATE WITH A SERIES OF COLORFUL GLASS PAVILIONS.

By Claudine Weber-Hof

Project: *Spa Bad Elster*
Bad Elster, Germany
Architect: *Behnisch & Partner—Günter Behnisch, Manfred Sabatke, partners; Christof Jantzen, project architect; Michael Blank, Dieter Rehm, Richard Besler, Nicole Stuemper, Thorsten Kraft, project team*
Client: *Sächsische Staatsbäder GmbH, represented by the State Department of Building, Zwickau*
Engineer: *Fischer & Friedrich Engineers*
Consultants: *Luz und Partner (landscape); Erich Wiesner (colors); Engineers Shtop (lighting); Transsolar Energietechnik (energy)*
General Contractor: *Harms and Partner*

Size: *187,000 square feet*
Cost: *$43 million*

Sources
Curtain wall: *Metallbau Friess*
Colored-glass louvers: *Bischof Glastechnik*
Pool tiles: *Agrob Buchtal Keramik*
Glass-mosaic walls and floors: *Bisazza*

www
For additional places of leisure and more information on the people and products involved in this project, go to Building Types Study at **www.architecturalrecord.com**

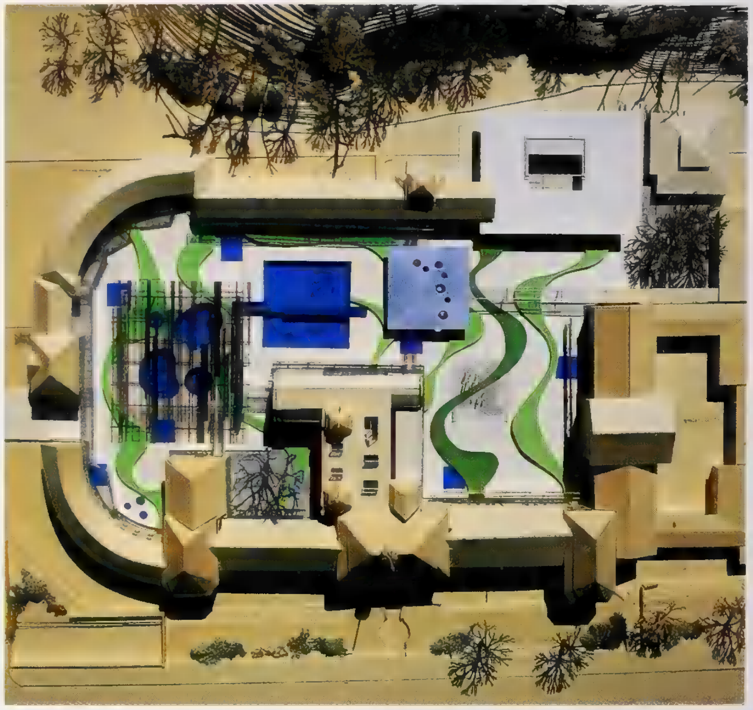
The situation

Ancient Romans used the phrase *sanitas per aquas* (health through water) when describing the place. Goethe devoted passages in a poem to the healing properties of its natural springs. Saxon royalty opened the first official bathing season here in 1848. And by the turn of the 20th century, the south Saxon town of Bad Elster featured a full-scale spa offering curative mud baths and Jugendstil charm near the Bavarian and Czech borders.

Bad Elster's glory days ended with World War II. Though used by East German *apparatchiks* during the Cold War, the spa fell into disrepair. In 1994 the district of Saxony decided to renovate the landmark buildings and give new life to the derelict inner courtyard, which had been used by the Communists to store mud, coal, and equipment.

Since the fall of the Berlin Wall in 1989, Germany's 350 spa towns have been competing for a younger clientele to supplement the pensioners on cures who had been their traditional market. To attract stressed-out young executives and shopped-out fashionistas, though, Bad Elster needed a makeover. What it got was the works.

The solution

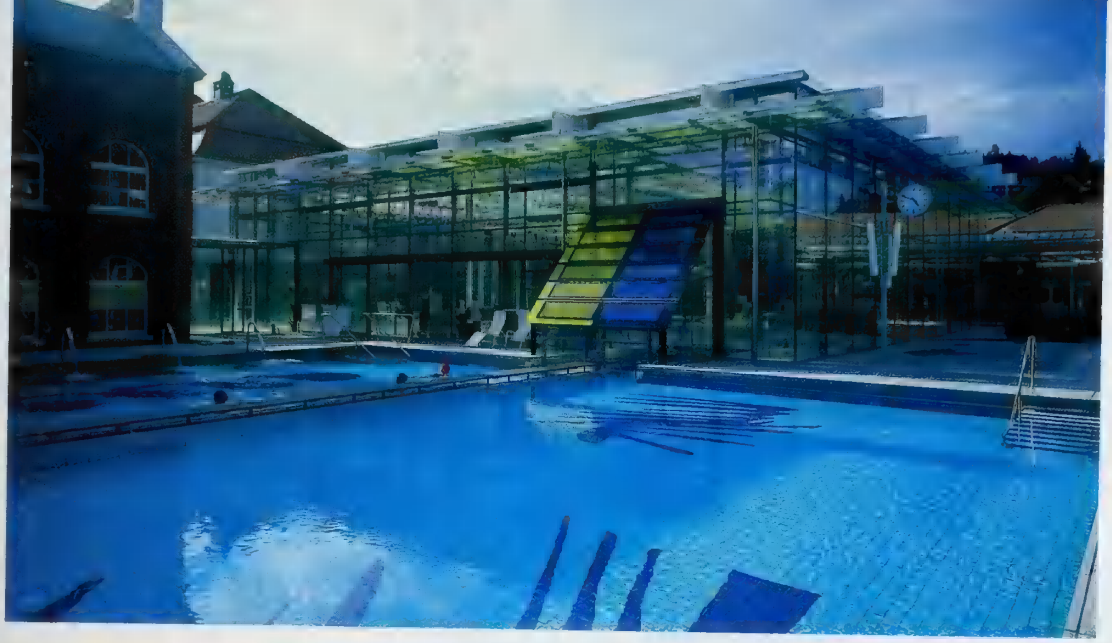


The spa hired the Stuttgart architectural firm of Behnisch & Partners to give its historic buildings a face-lift—renovating everything from subterranean steam pipes to old wall surfaces—and to add new facilities. Instead of imitating the old architecture, the new elements are mostly glass and steel and are clearly modern: A bathhouse, an information hut, and a treatment pavilion. The architects also attached glazed passageways and galleries onto the spa's historic walls. The result is a playful "bathscape" with a colorful bathhouse as the youthful new heart of the expansive complex.

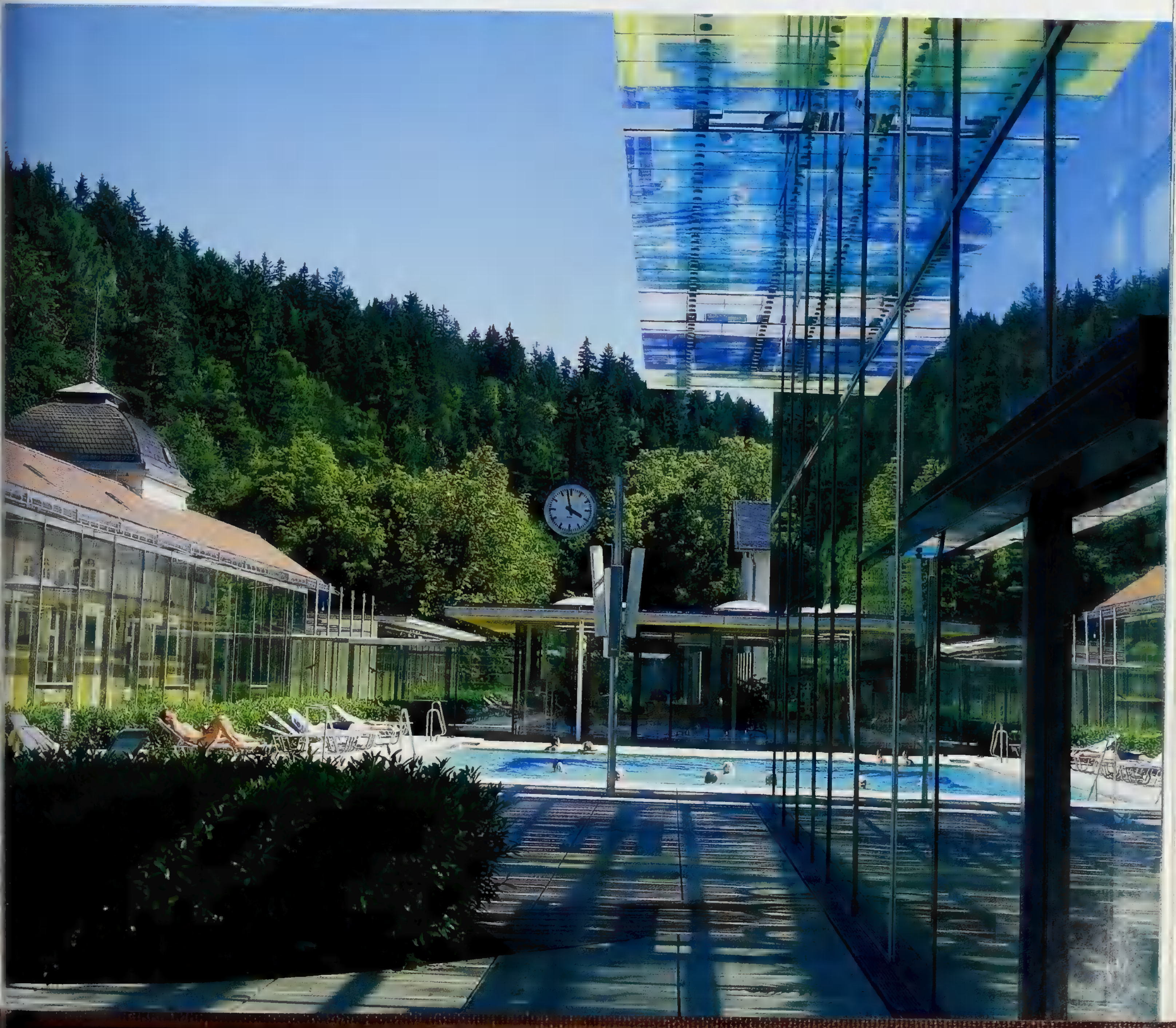
Visitors enter the spa from the west, through Albert Hall, a grand space that sets the stylistic tone for the complex. Built in 1910, it is elaborately tiled with fish and shell motifs. Together, the old buildings form a great court with two-story wings running perpendicular to the main facade.

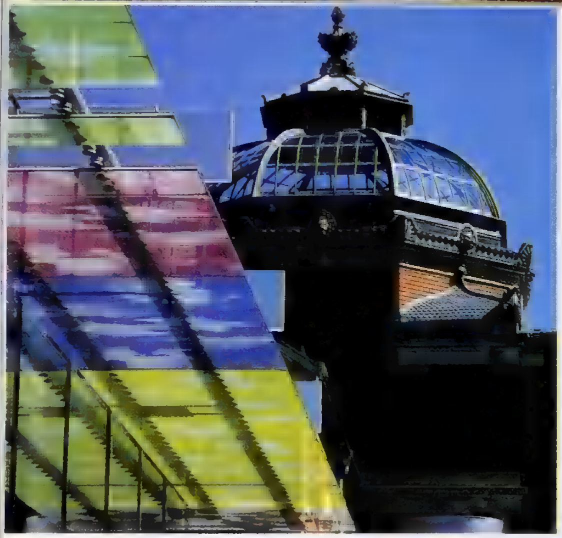
Architects Günter Behnisch and Manfred Sabatke understood people's great affection for the old buildings, but argued successfully that the new facilities should mark a deliberate break with the existing architecture. The architects' solution was to insert within the old courtyard a set of buildings that use color and glass to establish their own

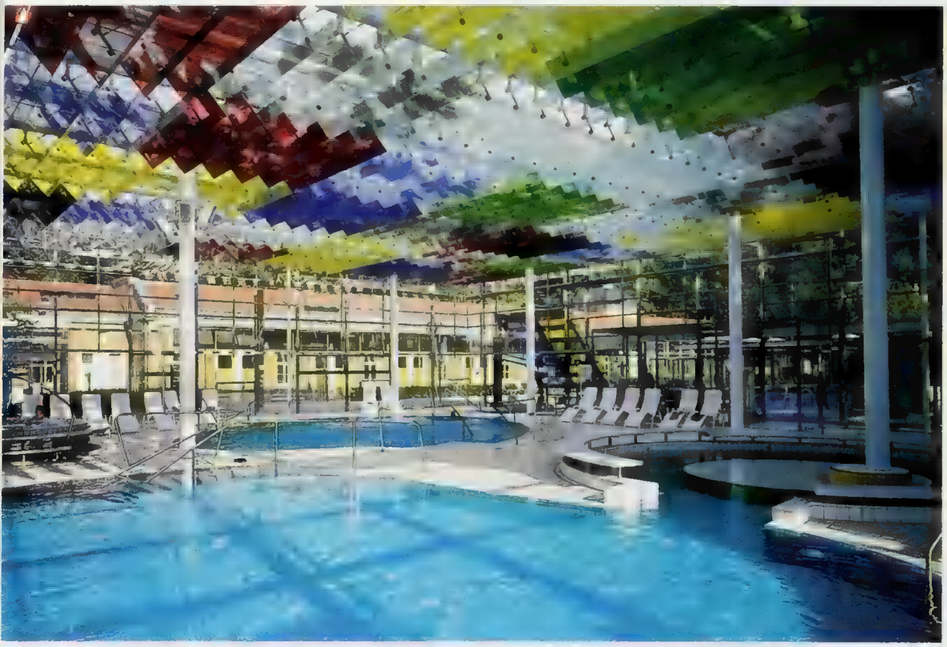
Claudine Weber-Hof writes about architecture from Munich.



The architects inserted a series of modern glass structures in the courtyard of the old spa (model photo, opposite). To get from an outdoor pool to an indoor one, guests can swim through a water gate (left), and enjoy the colored glass dancing above their heads (below).







While rooms in the old buildings were restored to their 19th-century glory, new spaces were given a modern treatment (above). The pool pavilions have double skins of glass with 3.3 feet of airspace as a thermal buffer. Operable glass louvers have a 45 percent white frit printed on their upper surface and colored film on their undersides (left and opposite). A clear glass roof above the louvers sits on a steel grid and glass beams.

too many new buildings so the courtyard wouldn't be cramped.

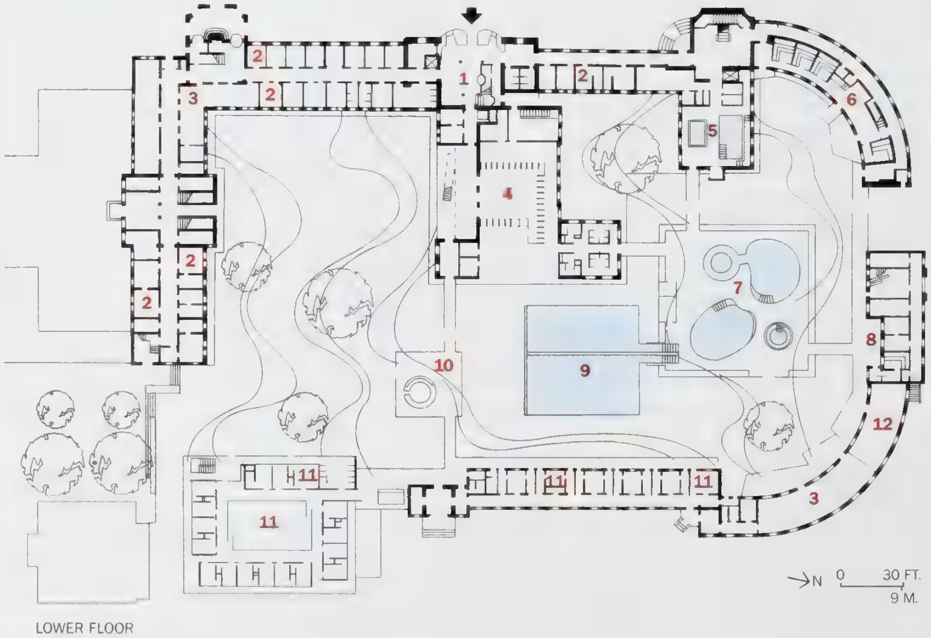
The Behnisch firm practices what it calls "situational architecture." At Bad Elster it set the transparent new structures inside the existing courtyard, using the elevations of historic buildings as a rich backdrop. The additions are placed in a loose and open manner within the old space, inviting social interaction. Visitors can see one another from the buildings, but they get a feeling of enclosure from the wings of the spa wrapping around the courtyard.

The client "wanted us to transform the court into a beautiful, usable space," says Sabatke. "We decided on a 'Persian carpet' concept, rolling out a field of color."

The bathhouse, the largest structure in the courtyard, contains three small splash pools connected by a water gate to two 66-foot outdoor pools. The building's double-skin construction has 3.3 feet of airspace between its twin layers of glass, so it acts as a thermal buffer between outdoors and in. The roof contains an ingenious climate-control system with an outer layer of clear insulating glass mounted on a white steel grid and glass beams. On top, the roof's gently sloping surface keeps rainwater on the move. Below this, suspended from the main steel frame, glass louvers can open or close, depending on the weather. The outer surface of the louvers is printed with a 45 percent white frit to reduce the impact of the sun, but the underside is livelier: Berlin artist Erich Wiesner coated these surfaces in blue, green, yellow, and red, making the uneven fields of color look like clouds floating across the sky.

Commentary

More than 10 years after the fall of Communism in East Germany and after an investment of some $43 million, Bad Elster has helped revitalize its region. "The baths are a point of pride, and all agreed that Bad Elster was well worth the investment," says Christoph Flämig, the mayor of the tiny township, who is also an architect. ■



1. *Albert Hall*
2. *Treatment*
3. *Resting*
4. *Changing/showers*
5. *Motion pool*
6. *Sauna*
7. *Pool pavilion*
8. *Steam bath*
9. *Outdoor pool*
10. *Scheduling*
11. *Mud treatment*
12. *Cafeteria*

Licorne Stadium
Amiens, France

2

CHAIX & MOREL DESIGNED AN EXPANDABLE STADIUM THAT BRINGS THE INTIMACY AND EXCITEMENT OF SOCCER BACK TO THE FANS.

By Claire Downey

Project: *Licorne Soccer Stadium Amiens, France*
Architect: *Atelier d'architecture Chaix & Morel et associés—Philippe Chaix, Jean-Paul Morel, principals*
Client: *City of Amiens (Direction de la Culture et du Sport)*
Engineers: *Ingerop, Inex, AR & C*
Lighting consultant: *Ingerop*

Size: *12,000 seats, expandable to 20,000 seats*
Cost: *$12 million (86.8 million francs)*

Sources
Masonry: *Quille*
Curtain wall: *Diter; Spapa*
Metal roofing: *Ursaa*
Elevators and escalators: *Thyssen*

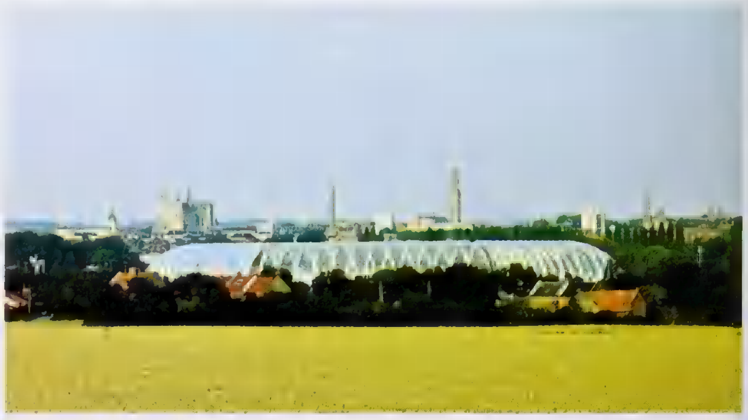
For additional places of leisure and more information on the people and products involved in this project, go to Building Types Study at **www.architecturalrecord.com**

The situation

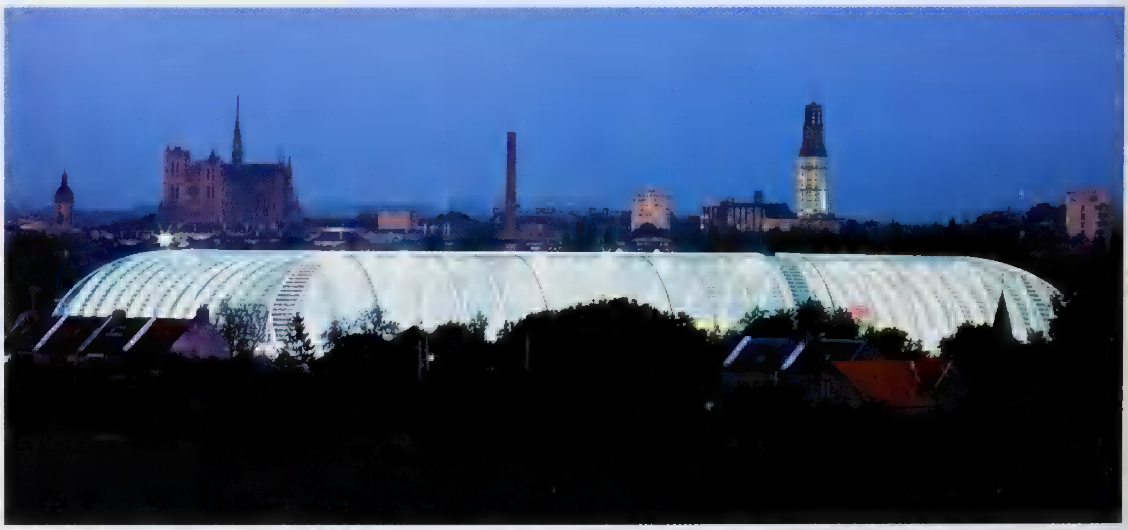
When the rainy, northern French city of Amiens decided in 1995 to build a new soccer stadium, it planned for the big time. Although its soccer team was a Division Two club, it hoped to move up to Division One, an elevation in rank that would require the city to expand the 12,000-seat Licorne Stadium to 20,000 seats.

The site available for the stadium had several assets, including proximity to the city center and a convention center, with ready access to existing parking and a new highway. But it had long been considered unbuildable because its boggy soil wouldn't support much construction. Whoever built on the site would need to coordinate architecture with some sophisticated engineering.

The city's department of culture and sports chose Paris-based Chaix & Morel to design the stadium, after admiring the firm's entry to a design competition for France's Grand Stade, a large stadium and concert venue in the Paris suburb of Saint-Denis. Although Chaix & Morel didn't win the Grand Stade commission, Amiens gave the architects the chance to realize at least part

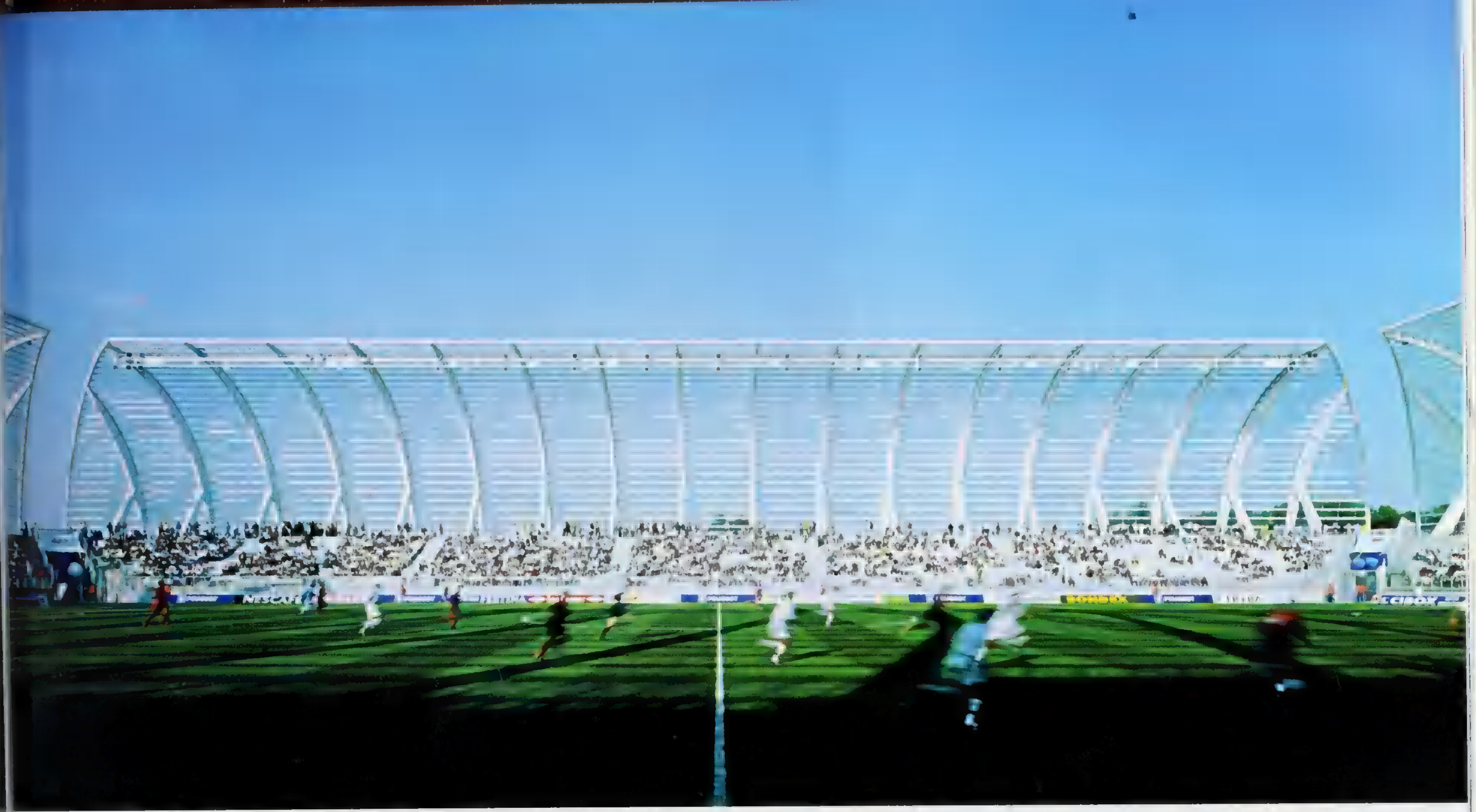


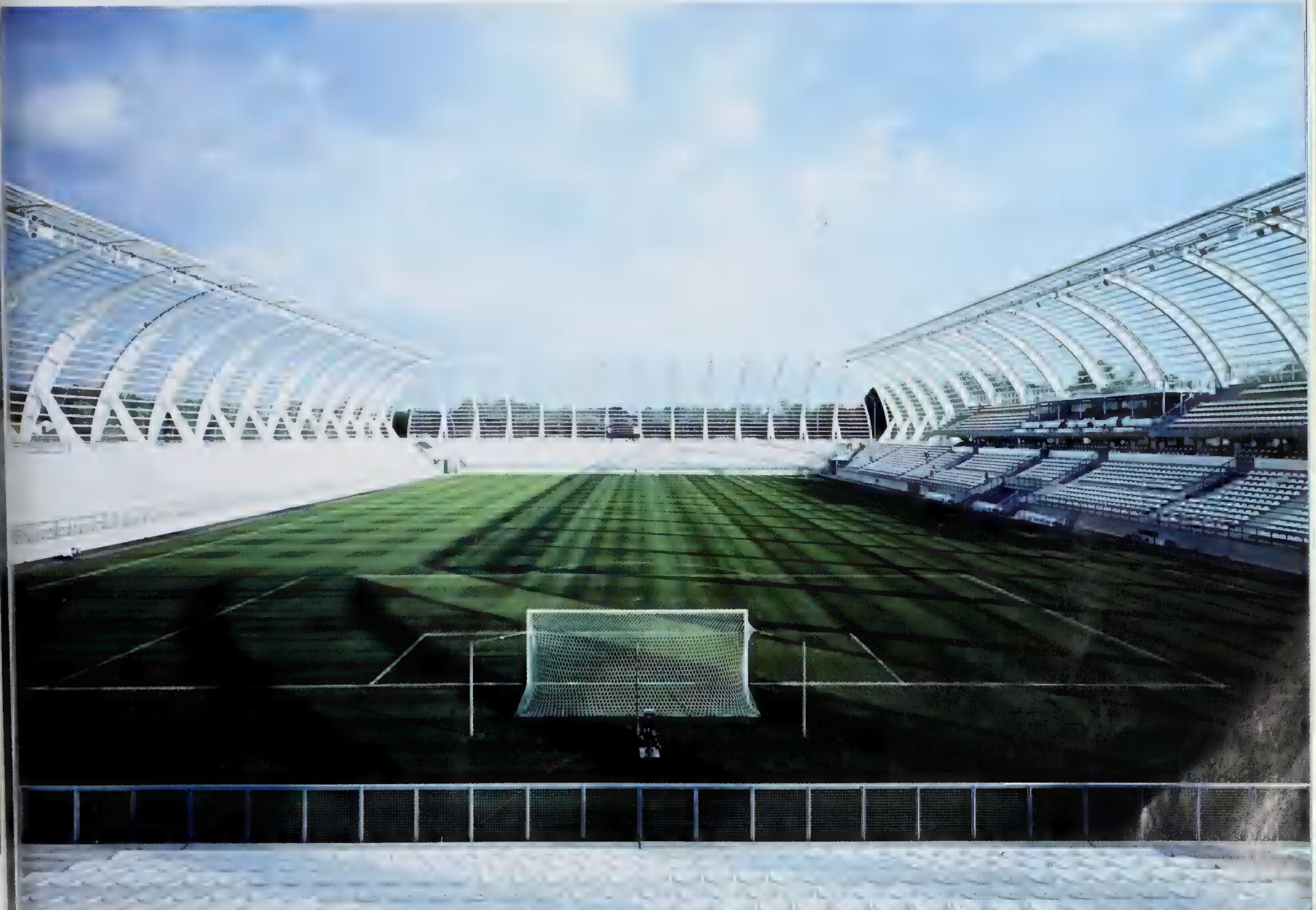
From a distance, the stadium seems to hover or glow before the city (above and below). But inside, it gets fans close to the action on the field (opposite, top and bottom).



RECORD correspondent Claire Downey edits This City Paris *magazine.*

PHOTOGRAPHY: © CHRISTIAN RICHTERS, EXCEPT AS NOTED; XAVIER TESTELIN (NIGHT VIEW)





Balconies with 8,000 extra seats can be added to the stadium between the curving steel ribs above the existing seating areas. The structure has been engineered to support the extra weight.

of their airy scheme, albeit at a much smaller scale, at the city's new Licorne Stadium.

The solution

The design developed by Chaix & Morel works from the ground up, literally. To stabilize the soil, the architects dug wells in a grid pattern under the grass and filled each with rock and gravel. Supporting the stadium itself are concrete piles sunk deep into the site.

The architects used a simple rectangular plan for the stadium, eliminating any superfluous structure and minimizing the building's weight. The ticket office, dressing rooms, VIP boxes, press booths, and all administrative services are located in a three-story pavilion on the western side of the stadium. Refreshment stands and a continuous circulation corridor run under the bleachers.

In section, the project strikes a memorable profile against the stone and medieval buildings of Amiens. On the inside, steep, uniform concrete seating acts as both bench and stair. The seating is divided into four sections, one on each side of the playing field.

To allow daylight in and to block wind and rain, the architects designed two pairs of curving glass-and-steel wings that rise above the four sections of seating. Arching steel ribs, 26 feet (8 meters) on center, support the glass, along with horizontal steel tubes running between each rib in a series of "ladders." The four glass wings, which don't touch at the corners, allow air to circulate between the seating areas and provide access to the field at the ground level. From outside Licorne Stadium, the wings appear to float above a recessed first-level wall, painted sky blue. Lighting for night games is attached to the upper edge of the arc, 85 feet (26 meters) above the field.

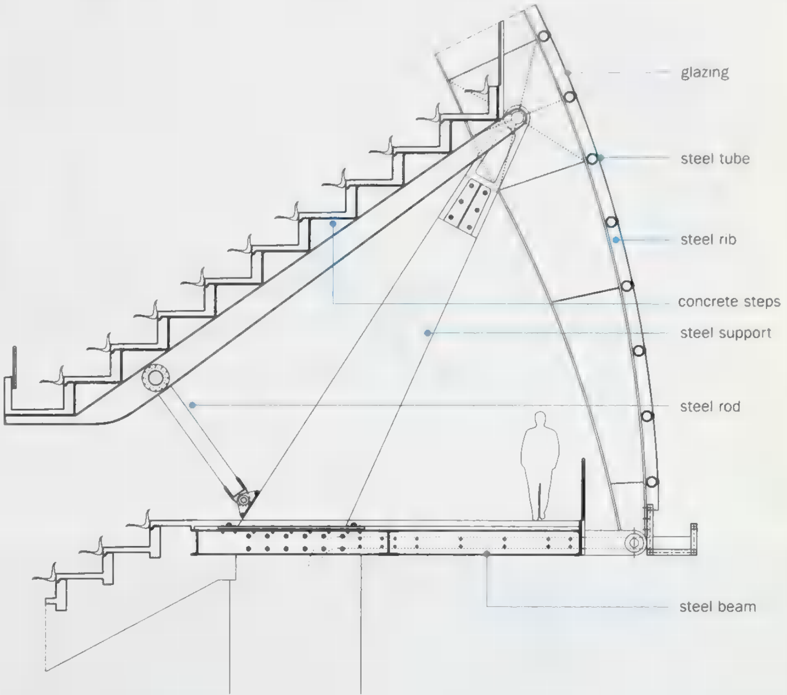
If Amiens moves up to the big league, it can add 8,000 seats with minimal expense by inserting balconies between the curving steel ribs above the existing seating. The connecting detail to hook the balconies onto the ribs has already been designed, and the existing structure has been built to handle the extra weight.

Commentary

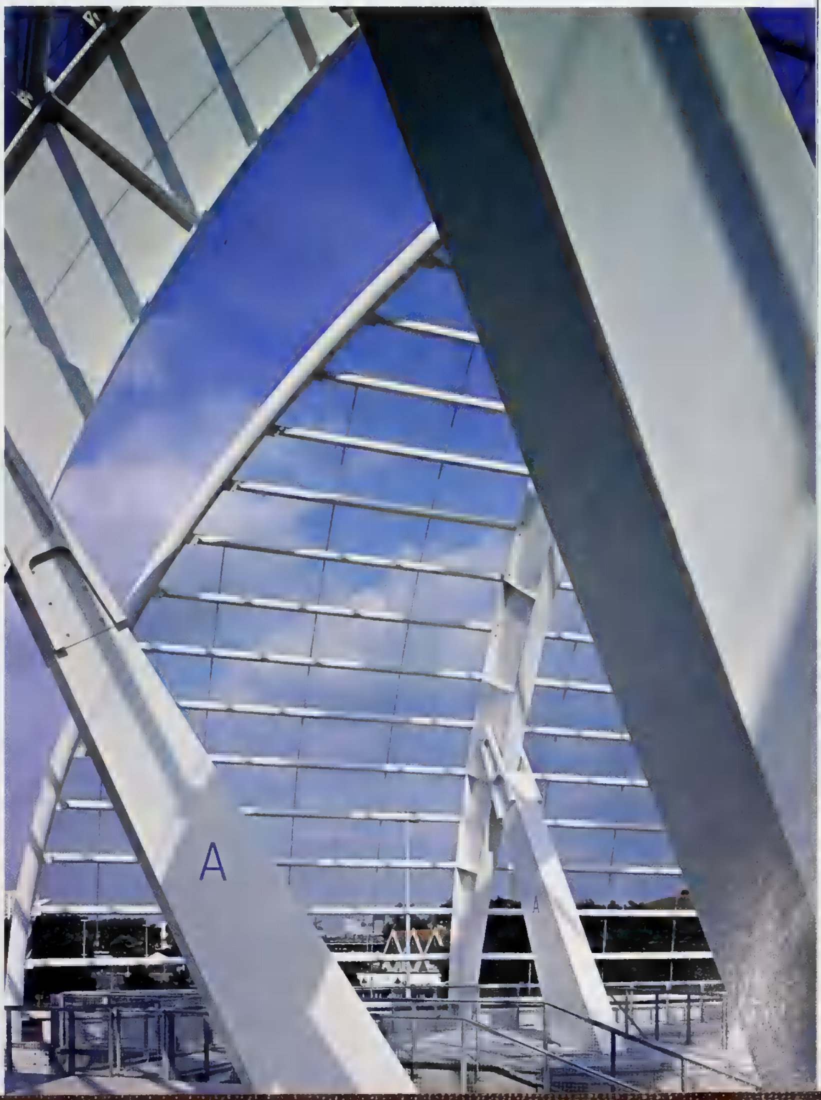
While designing Licorne Stadium with his partner Jean-Paul Morel, Philippe Chaix remembered his own soccer-playing experiences, especially the way the green playing field met the blue sky. To Chaix, today's bunkerlike stadiums, which often turn their backs on their surroundings or even close off the sky with roofs and domes, are alienating, even unsportsmanlike. At Amiens the idea was to reduce the mass of the bleachers and enclosing walls, reinforcing the idea of being outdoors, while at the same time bringing the public closer to the action on the field.

Ironically, the architects' vision of a graceful sports arena in touch with its surroundings was helped by a change in French law meant to deter hooliganism. To encourage compliance with the law, the authorities installed surveillance cameras around the stadium at Amiens, which freed the architects to do without the high chain-link fences found at other arenas. It also let the designers bring the bleachers closer to the playing field, so they almost touch the grass. Now open for over a year, the stadium has been a popular success, attracting large (and well-behaved) crowds.

Licorne Stadium is also successful for its integration with the landscape—nestling among farm fields and the historic town center. In fact, if the game is a bit slow, the stadium's crystal shell offers great views of the town with its magnificent Gothic cathedral and an early office tower by Auguste Perret. Using modern construction and elegant proportions, the stadium fits into its setting without imitating the city's older architecture. ■



SECTION THROUGH STANDS



Curving steel ribs and horizontal steel tubes support glass panels that protect fans from strong winds while allowing sunlight to shine into the stands and onto the field (right).

East Hampton Rec Center

East Hampton, New York

3

DAVIS BRODY BOND STRIPS AWAY SOME OF THE USUAL WRAPPINGS TO SHOW OFF A SWIM-AND-FITNESS CENTER'S WELL-TONED MUSCLES.

By Clifford A. Pearson

Project: *East Hampton Rec Center, East Hampton, New York*
Architect: *Davis Brody Bond, LLP—Steven Davis, FAIA, partner; Frank Michielli, AIA, design partner; David Manty, AIA, Ron Eng, Fred Chomowicz, AIA, project team*
Owner: *Town of East Hampton*
Engineers: *S.L. Maresca & Associates (structural); Mottola Rini Engineers (mechanical)*
Lighting designer: *Anita Jorgensen*
General contractor: *Sandpebble Builders, Inc.*

Size: *21,000 square feet*
Cost: *$3.6 million*

Sources
Standing-seam aluminum panels: *Atas International*
Mahogany-frame windows: *custom by Sandpebble Builders*
Clear, low-E glass: *Otto Glass*
Metal doors: *Vista Wall*
Plastic-laminate work surfaces: *Formica*
Unglazed ceramic tile for pool: *American Olean*
Ground-face masonry units: *Tren Wyth Industries*
Recycled rubber-roll floor cover: *DodgeRegupol, Inc.*

www

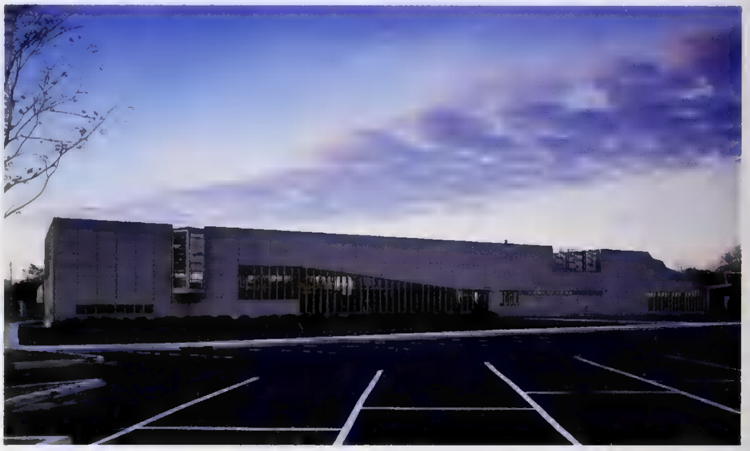
For more places of leisure and more information on the people and products involved in this project, go to Building Types Study at www.architecturalrecord.com

The situation

The Hamptons may be famous for beaches and outdoor parties, but they have never had many indoor recreational facilities. A nonprofit organization called the East Hampton Youth Alliance decided to fill the void with a multipurpose center that would provide a place for young people to exercise their bodies and minds on rainy days and during the long winter months. By including areas for computers and for just hanging out, in addition to swimming and exercising, the group hoped to attract a broad range of users and give the facility some of the attributes of an unofficial community center. After its completion, the project was leased to the YMCA, which now runs the facility.

Although conveniently located within walking distance of the train station, the site abuts a residential neighborhood where homeowners worried that a large institutional building would change the character of the area. Height restrictions and a tight budget of just $3.6 million ($175 a square foot) provided further challenges in an area where $350 a square foot is considered a reasonable price for private houses.

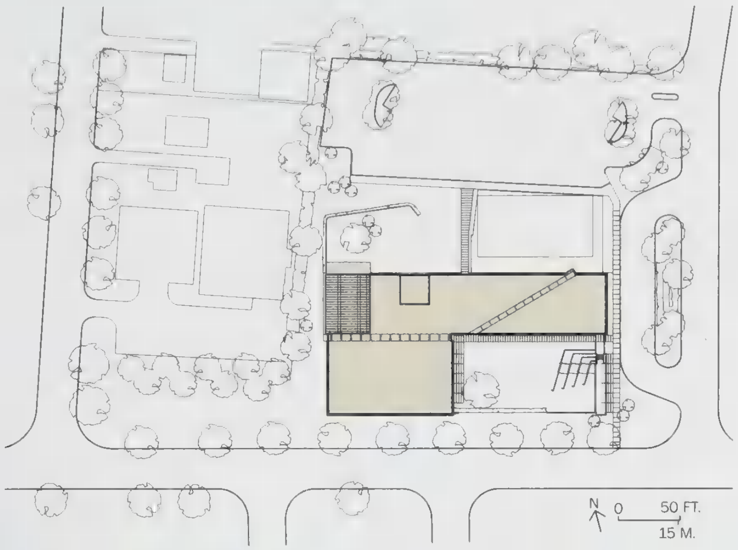
The solution



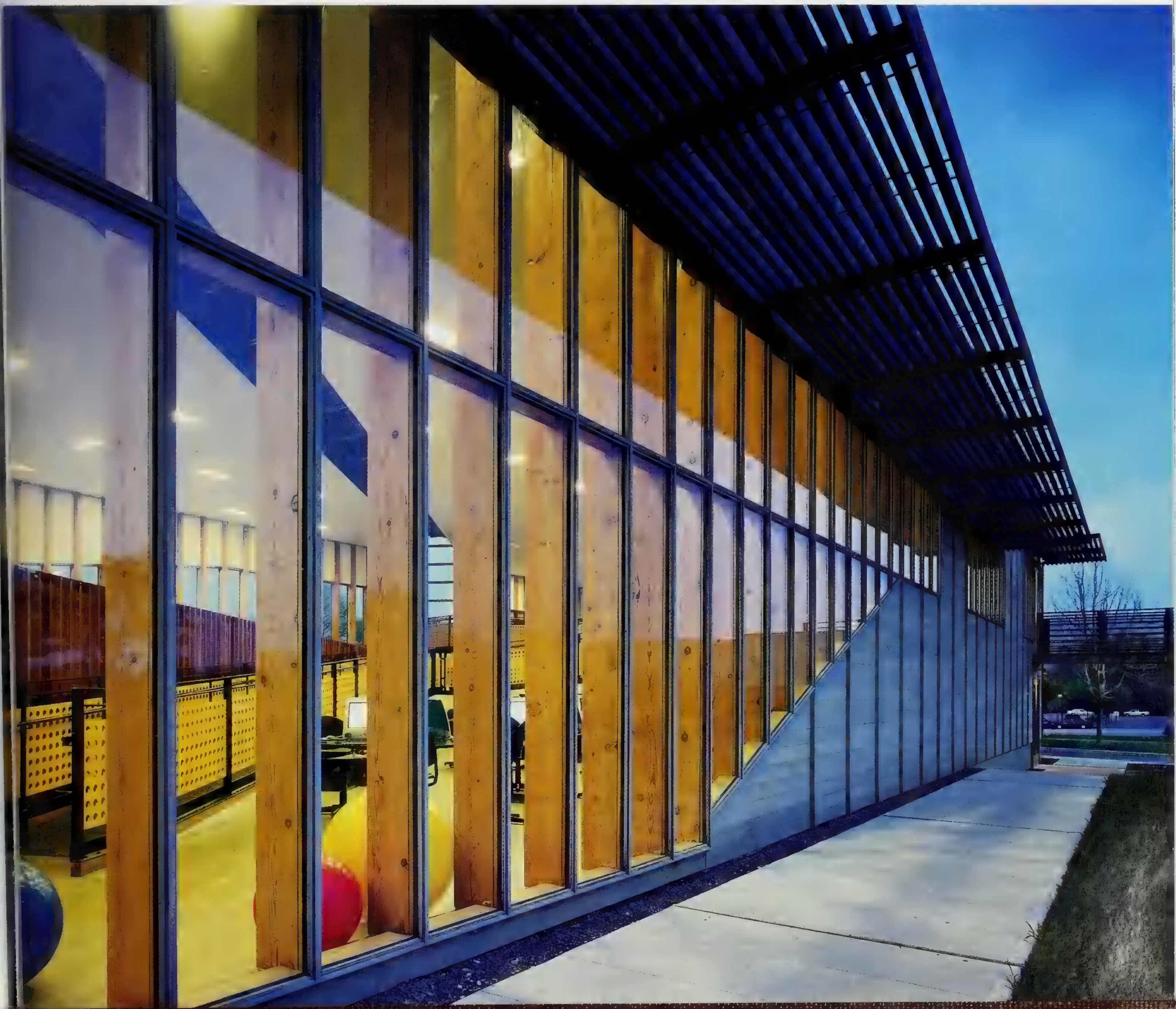
To relate the new building to the area's rural history, the architects at the New York City firm Davis Brody Bond thought of the 21,000-square-foot rec center as if it were a large farm building. "We saw the project as a tailored barn—a cross between a rough farm structure and a refined cabinet," says Frank Michielli, AIA, design partner for the project.

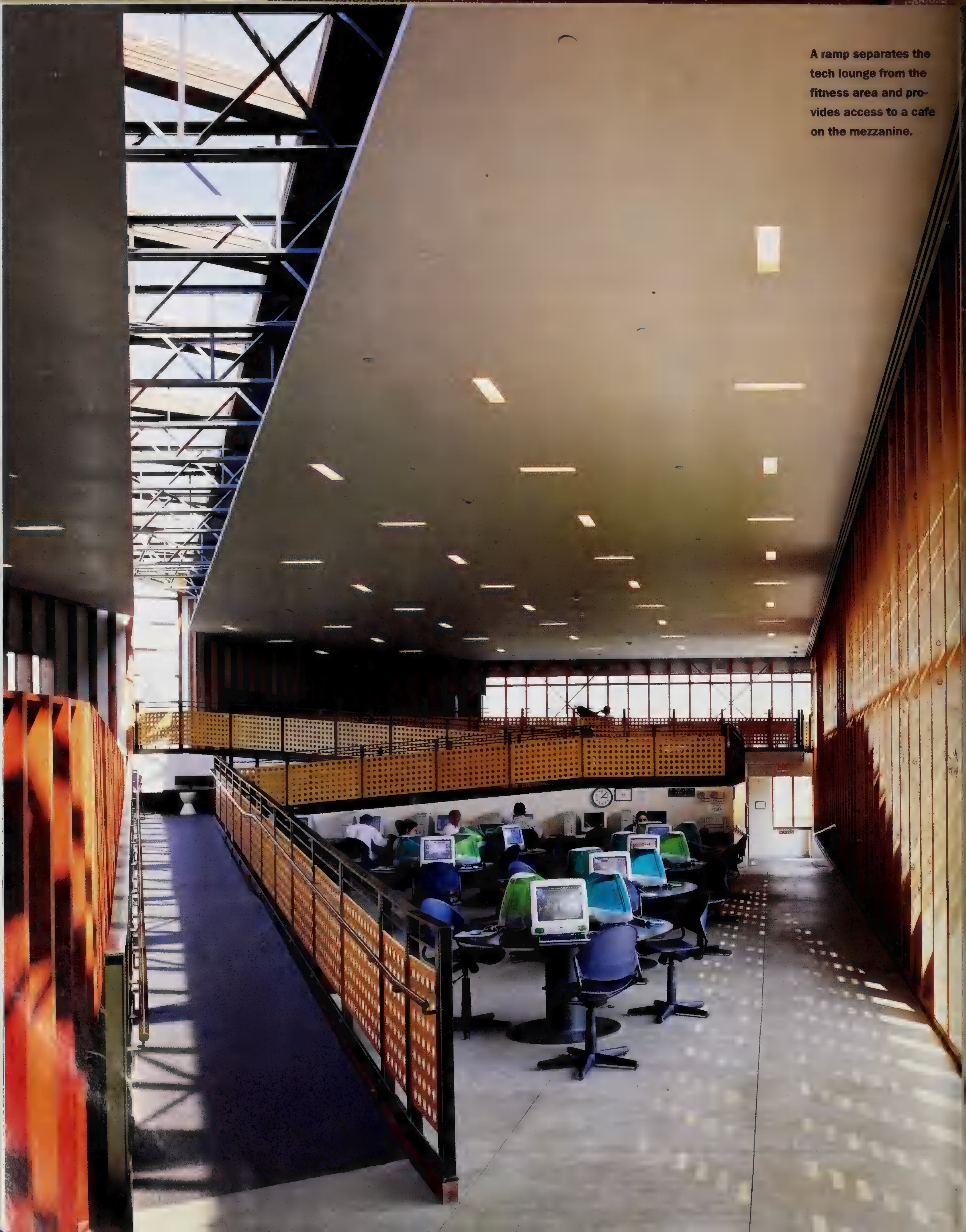
The architects clad the building in Western red-cedar lapboard laid flush between cedar battens. The distinctive fenestration on the main (north) facade echoes a ramp running through the east half of the building and other interior features such as a lounge and a set of offices. "We wanted to project the building's section on the facade to hint at what's going on inside," says Michielli. The wood cladding and a design that recalls the area's vernacular buildings helped convince local homeowners that the rec center would be a good neighbor. "We met with the neighbors a lot and talked about the materials, scale, and height of the building."

Structurally and functionally, the rec center is really two buildings: a steel-frame one for the swimming pools and a wood-frame one for fitness and computer activities. A concrete-block core with offices, locker rooms, and showers connects the two halves of the building. Although the architects had originally hoped to make the entire building wood-framed, steel was a more economical way of spanning the 65-foot-wide volume enclosing the two swimming pools.

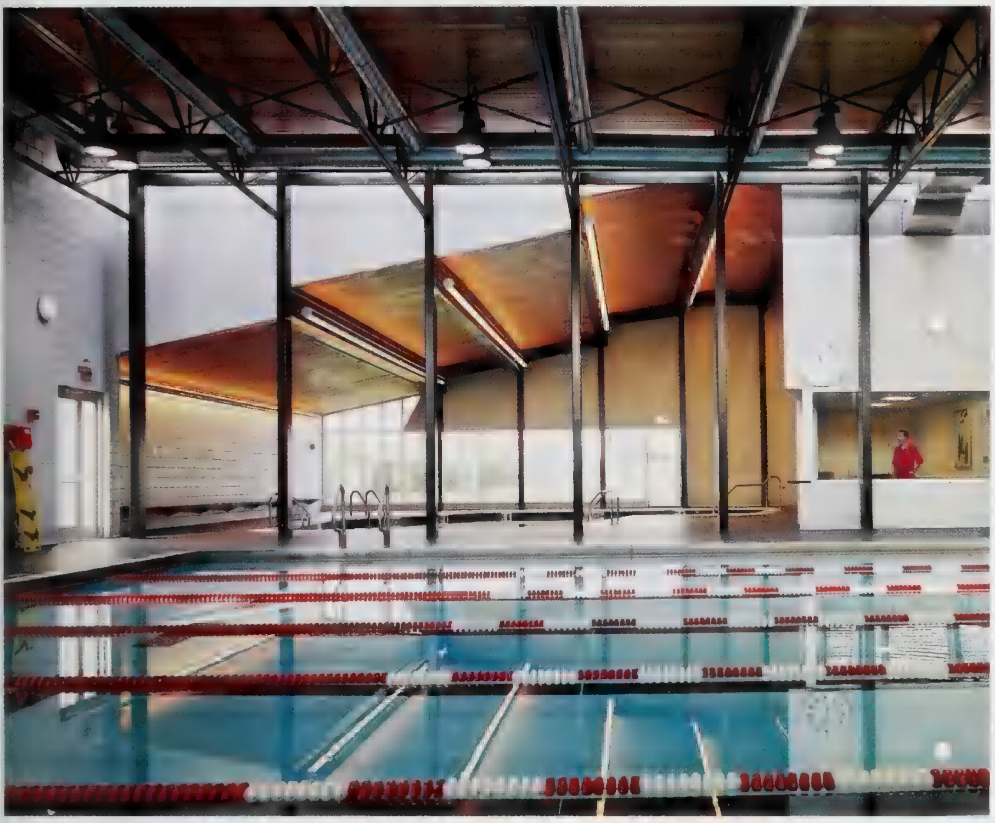


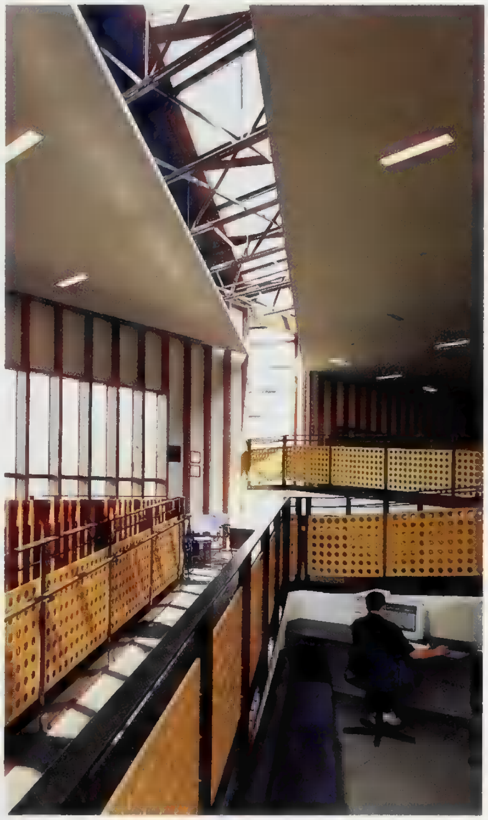
Individuals enter the building from the north (opposite, top), but groups are dropped off on the east side (opposite, bottom), where they can congregate in a grassy courtyard. Mahogany-slatted elements help protect the south-facing elevations from the sun (below).





A ramp separates the tech lounge from the fitness area and provides access to a cafe on the mezzanine.





A six-lane, 25-yard lap pool and a small children's pool occupy the steel-frame portion of the building (above), while lounges and workout areas are in the wood-frame portion (above right).

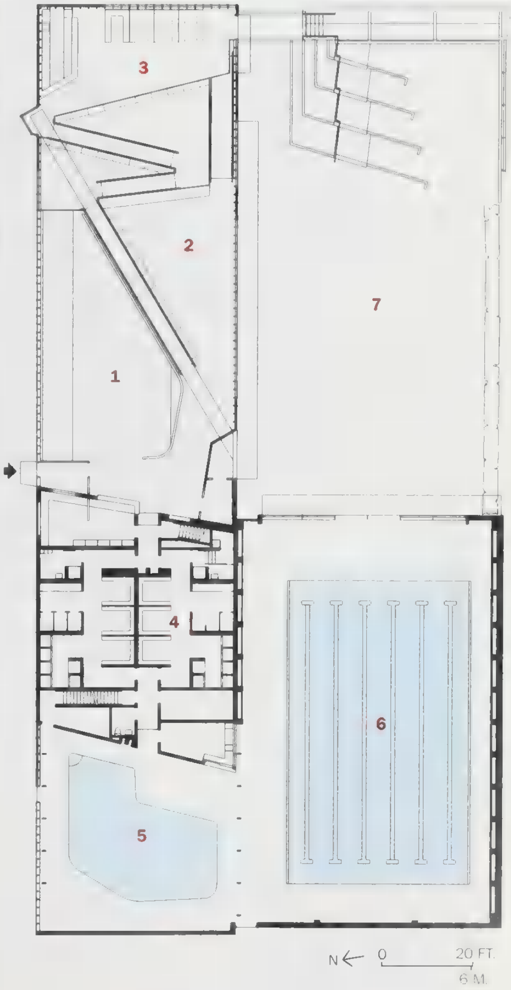
In both halves of the building, the architects exposed the structural framing, using it as an essential element in the project's architectural expression. In the fitness and lounge area, 24-foot-high wood studs set four feet on-center establish a visual rhythm that holds the large space together—literally and figuratively. In the swimming area, steel columns create eight-foot-wide bays that help give this portion of the building its own character. "In this building, the structure *is* the enclosure," states Michielli.

The architects applied a similar kind of stripped-away approach to the ceilings, exposing roof trusses under long, narrow skylights. Showing off the building's bones seems appropriate for a place dedicated to building human bones and bodies. It also works well with an open plan that relies on ramps and low balustrades instead of walls to separate areas. Indeed, as visitors walk along the ramp that divides the fitness area from the computer-equipped tech lounge, they have the chance to see everything happening here. "I wanted the circulation to be part of the life of the building," says Michielli. The ramp, which leads to a mezzanine cafe, also eliminated the expense of having an elevator.

Controlling sunlight was an important consideration since swimmers and computer users need to be protected from glare. So south-facing elevations are shielded by mahogany sunshades cantilevered from the building and stabilized by metal cables. In the pool area, south-facing glass starts only 15 feet above the ground, while on the east, glazing is floor-to-ceiling.

Commentary

With sunlight rippling between its exposed-stud frame, the East Hampton Rec Center is a magnet for kids and adults alike. "The building is really welcoming," says Roberta Bisignano, executive director of the facility for the YMCA. "It doesn't have an institutional feeling," adds Bisignano. Without a budget for refined finishes or details, the architects used simple materials in a straightforward manner and gave it a rugged, honest charm that seems just right for a place where people pump iron and sweat. ■



1. *Fitness*
2. *Tech lounge*
3. *Cafe*
4. *Lockers*
5. *Children's pool*
6. *Lap pool*
7. *Courtyard*

Diversey Driving Range
Chicago

4

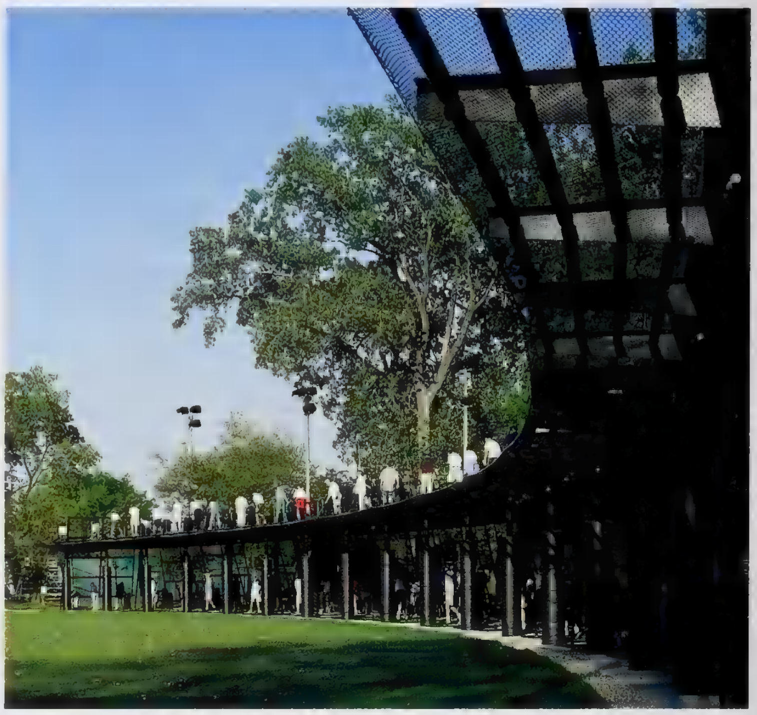
DESTEFANO + PARTNERS TURNS WARY COMMUNITY GROUPS INTO FANS BY DESIGNING A UTILITARIAN STRUCTURE AS A LANDSCAPE FOLLY.

By Clifford A. Pearson

Project: *Diversey Driving Range, Lincoln Park, Chicago*
Architect: *DeStefano + Partners—James DeStefano, FAIA, managing partner; Avram Lothan, AIA, design partner; Carl Moskus, AIA, technical coordinator; Ian Bush, project architect*
Client: *Chicago Park District*
Engineers: *Matrix Engineering (structural); Building Systems Design (electrical)*
Landscape architect: *Peter Lindsay Schaudt Landscape Architecture*
General contractor: *F.H. Paschen/S.N. Nielsen, Inc.*

Size: *72 driving stalls; 324 feet long; 12,400 square feet*
Cost: *$1.1 million*

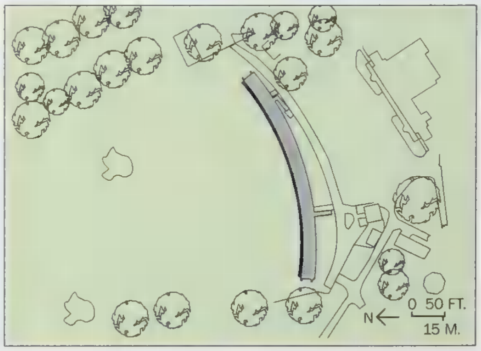
Sources
Structural steel: *Shelco Steel Works*
Steel screens and stairs: *Mechanical & Industrial Steel Services*
Paving: *Artley Paving*
Paint and coatings: *FranCo.*
Concrete: *Newfoundland*



The situation

When the company that manages golf facilities for the Chicago Park District proposed an expansion of the Diversey Driving Range in Lincoln Park by simply adding a no-frills, second-level deck, community groups gave it the thumbs-down. The second time around, the company, Kemper Golf Management, and the Park District took a different approach, hiring an architectural firm that understood the important role that even simple structures play when set in a public park.

The project's program couldn't be more basic: double the number of driving stalls from 36 to 72, while maintaining essentially the footprint of the existing single-story range. But as everyone learned from the first proposal, simply adding a utilitarian steel deck above the old facility was not the answer. To get approvals, the new structure would have to pass muster, not just with urban golfers, but with a diverse group of people who use Lincoln Park.



The solution

Understanding the sensitive setting for the project, the architects at DeStefano + Partners decided to "reinvent the structure as a landscape feature or folly," explains Avram Lothan, AIA, the project designer. The idea was to make a light and transparent object, using trellises and perforated metal instead of solid walls. Ivy and Virginia creepers on the trellises would connect the metal structure to the landscape.

Since the site was landfill made from the debris of the 1871 Chicago Fire, the architects had to keep the structure fairly lightweight. To support a second level, they rebuilt the existing foundation as a network of concrete grade beams; like a raft, it allows the whole structure to move as one piece. While the new facility follows the same 324-foot-long arc as the old range, an additional three feet behind the golfers provides extra room for circulation.

The architects used concrete for the foundation and second-level deck, but designed the rest of the structure as an exercise in metal. Steel columns set 18 feet on center establish 18 bays, each with two golfing stalls. To reduce the time

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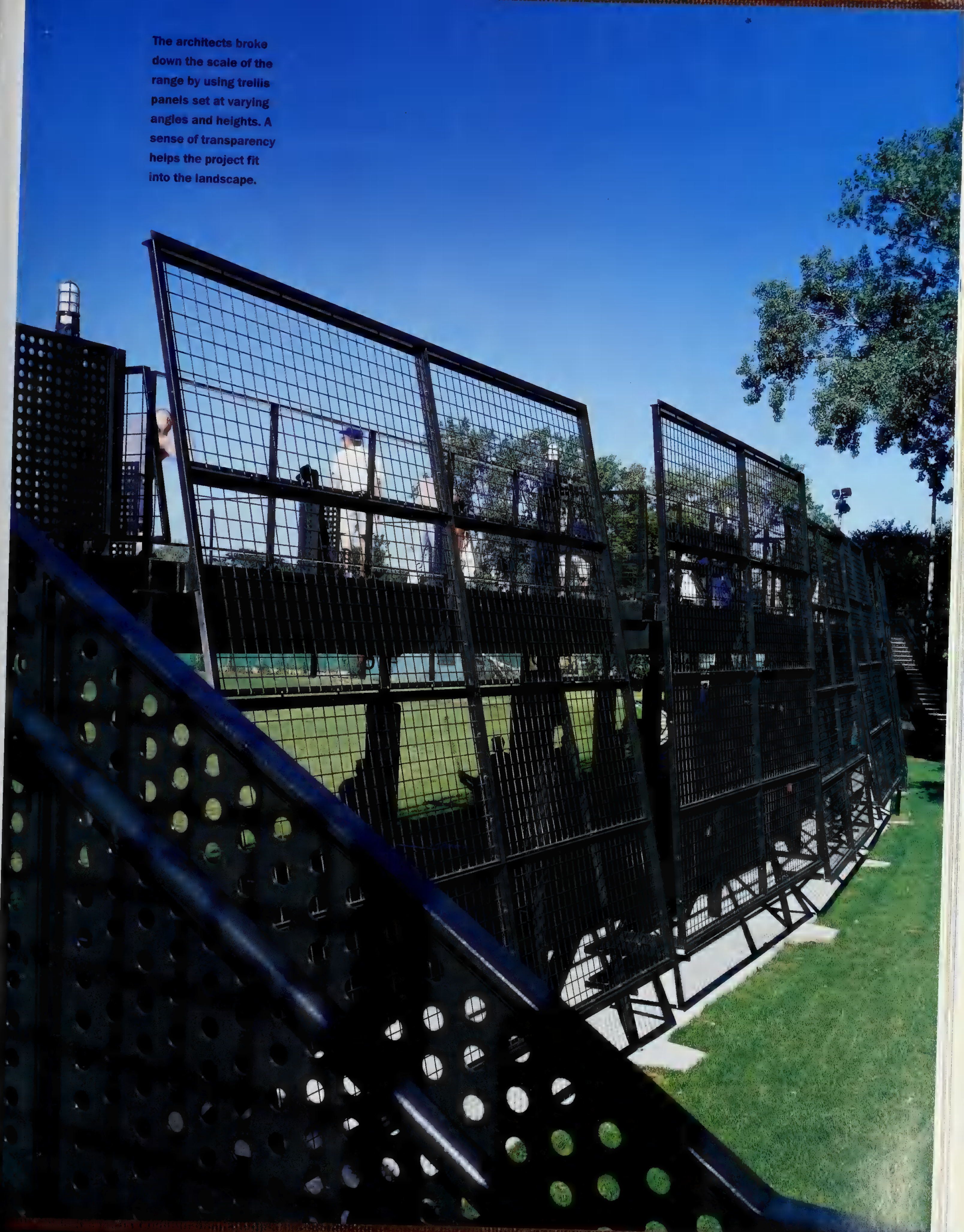
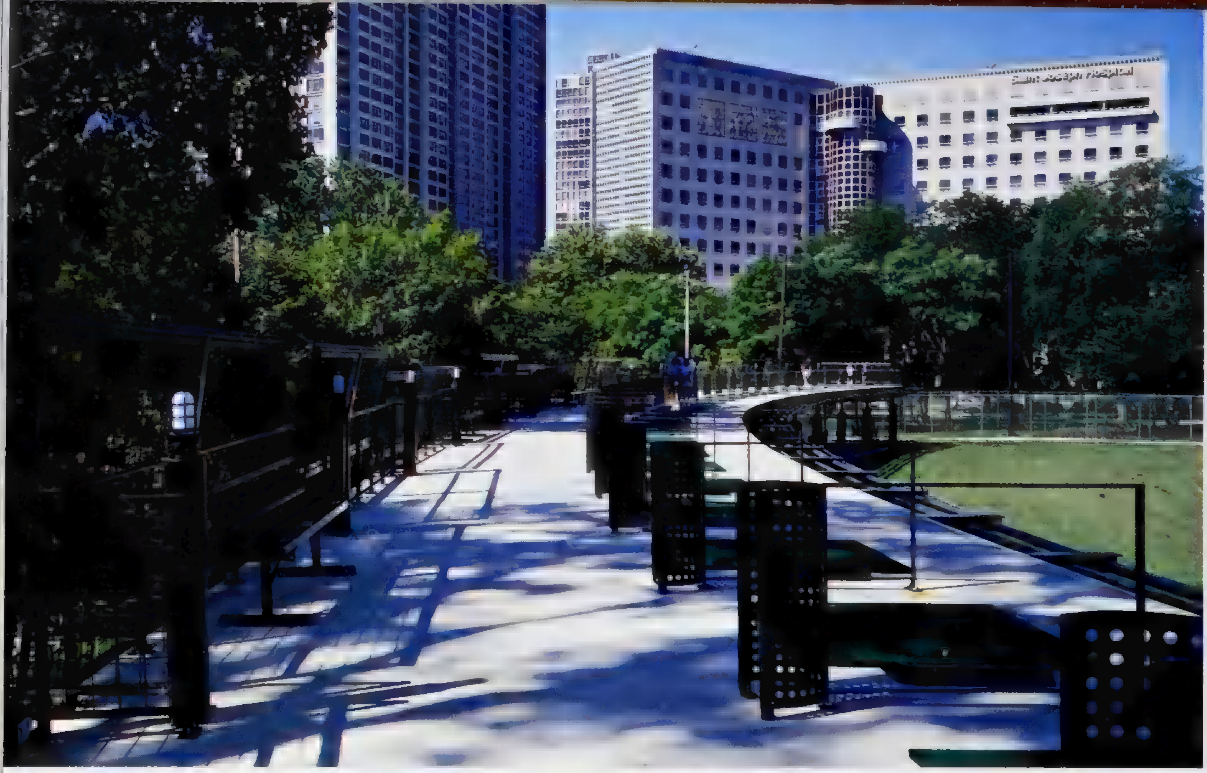
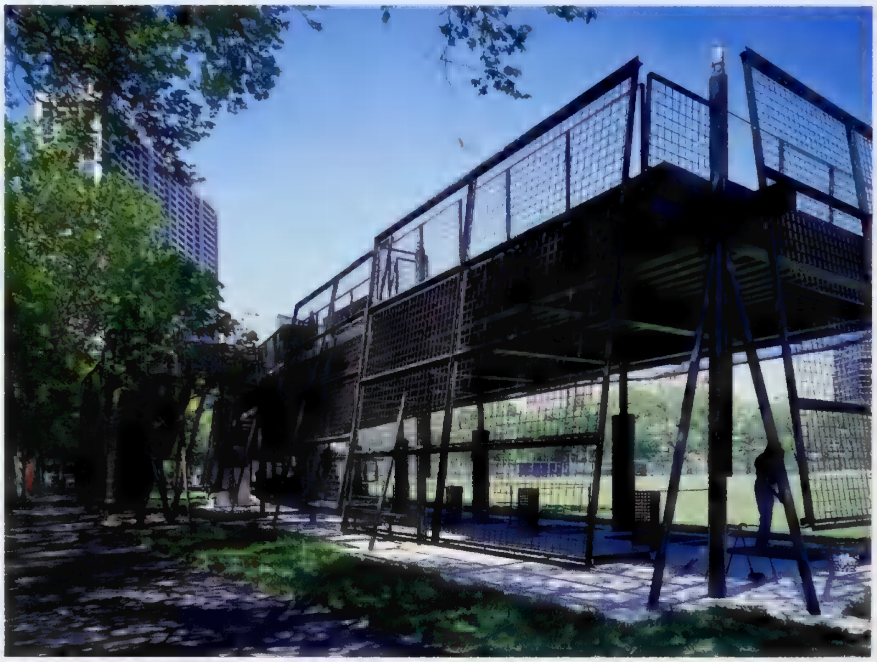


The architects broke down the scale of the range by using trellis panels set at varying angles and heights. A sense of transparency helps the project fit into the landscape.

PHOTOGRAPHY: [illegible]



The second level of the range (above) was designed almost as an urban streetscape with curving metal golf-bag stands and benches defining the walkway and framing views of nearby high-rises. Instead of trying to hide the structure or make it invisible, the architects treated it as a metal folly in the landscape (right and below).



needed for construction, the steel-mesh trellises were built off site during the winter, then bolted onto the structure's welded-steel frame in the spring.

The trellis panels are 16 feet 8 inches wide and vary in height from 12 to 14 feet. Attached to the structure at different angles and heights (from 6 to 36 inches off the ground), these prefabricated trellises help break the facility into a series of architectural moments. "We wanted them to dance," says Lothan. "We didn't want this project to be too serious."

While the architects sold the project to the public as a light and airy structure, they wanted to give it an architectural presence too, says Lothan. So they built up layers of materials—metal mesh over steel frame, and gridded-metal balustrades attached to steel stairs. "From some angles, the golf range seems remarkably transparent, but from others it has more density," explains Lothan. In the winter, canvas is attached to the structure to protect the lower stalls, which have heaters to keep die-hard golfers in the swing. The Diversey facility is the most popular of the city's three driving ranges and stays open 364 days a year. On good days, it rents 1,000 buckets of golf balls.

"The most important aspect of the project is the relationship between the architecture and the landscape," states Robert Megquier, director of planning and development for the Chicago Park District. "The range has to fit in and make a contribution to the park as a whole," adds Megquier. "When you're not in it, the structure almost disappears because it's so transparent. But when you're in it, it feels like a real piece of architecture."

Commentary

Taking advantage of the public-approvals process, the architects turned what started as a purely utilitarian project into an architectural exercise. Neither a shrinking violet nor a visual bully, the $1 million golf range helps animate a piece of Lincoln Park by offering a spiky metal contrast to the green all around it. The project's curving plan and its "dancing" trellises create a series of design vignettes, a lively procession of see-through elements. While the enclosure around the project's 18-acre site is the usual dumb fencing found in many public parks, the driving structure itself is an intriguing insertion in the landscape. And like the little Palladian temples that English gentlemen added to their estates in the 18th century, the golf range offers an excellent vantage point from which to admire the surroundings. ■

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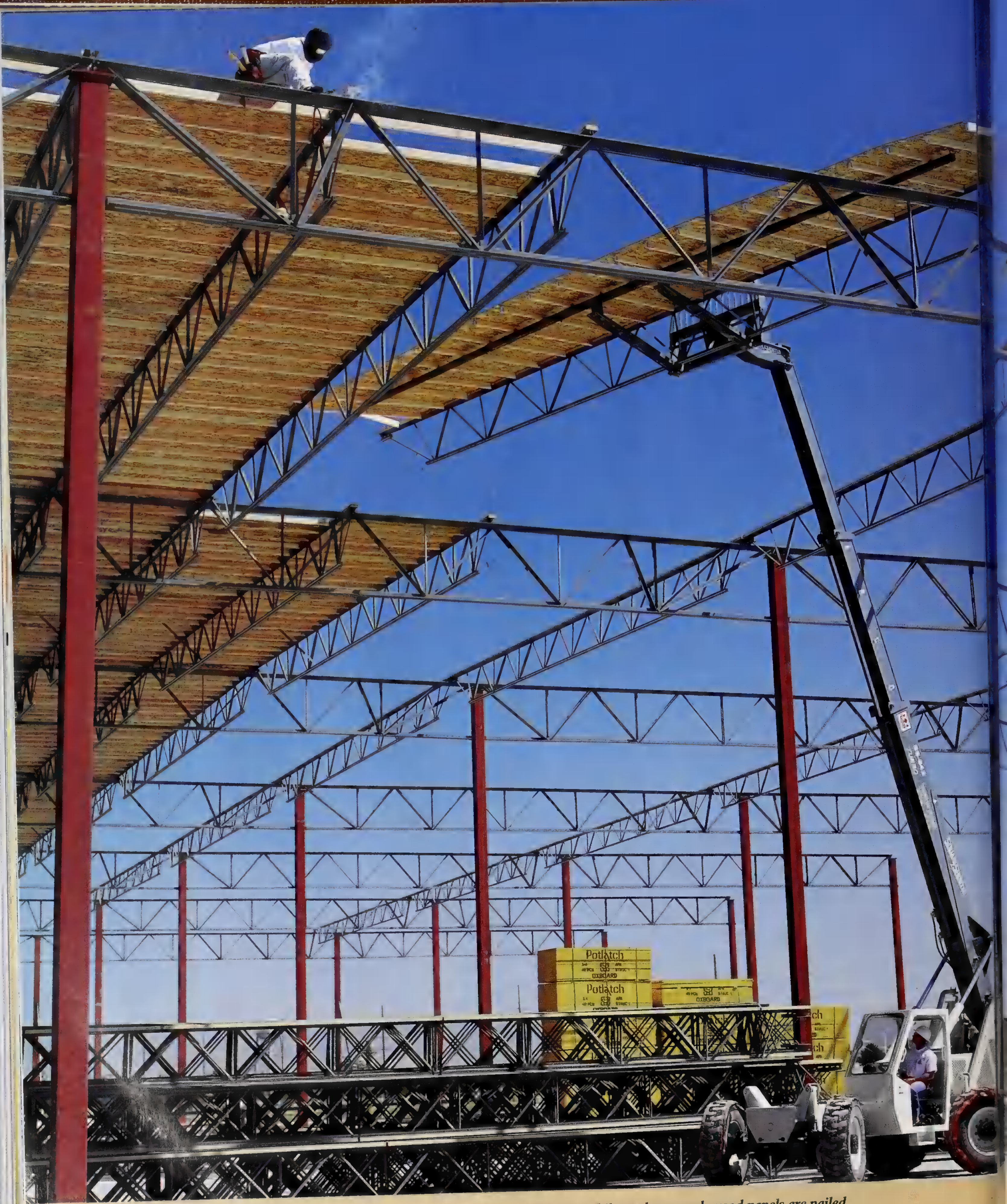

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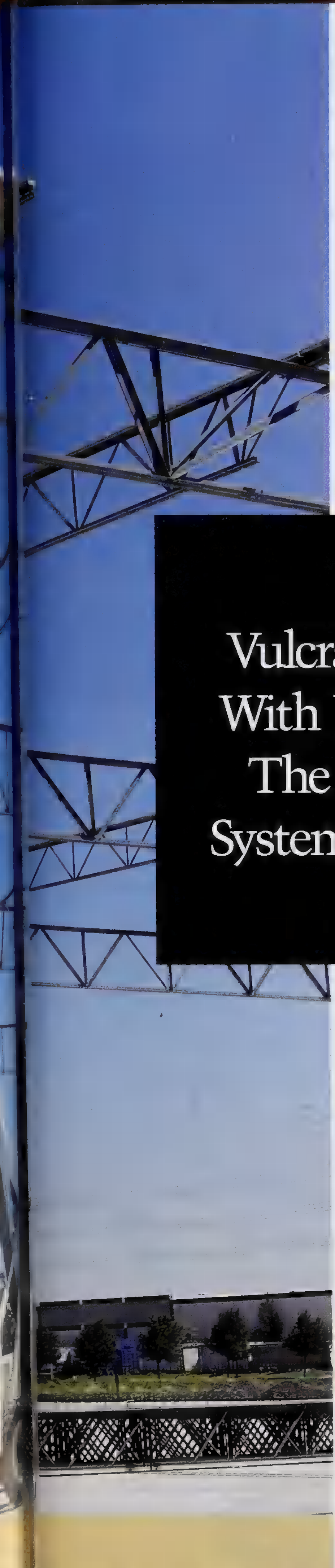

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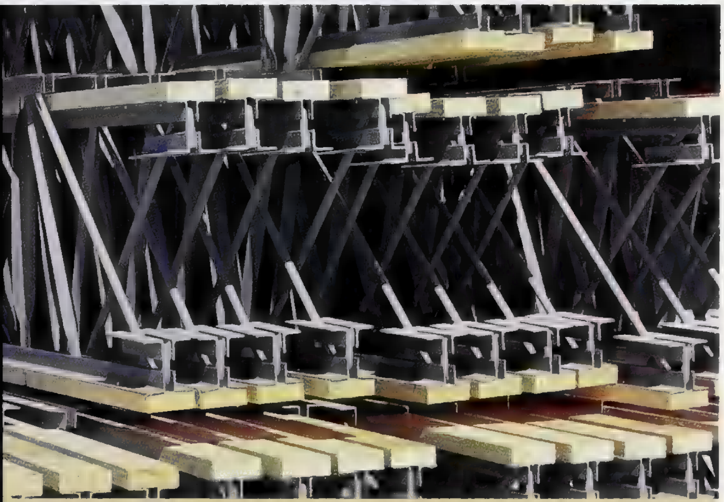

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Drain It Right: Wetlands for Managing Runoff

MANAGING STORMWATER RUNOFF WITH DETENTION PONDS IS LIKE TRYING TO LOSE WEIGHT BY TAKING DIET PILLS: LONG-TERM CONSEQUENCES OUTWEIGH SHORT-TERM BENEFITS. NATURAL SYSTEMS SUCH AS WETLANDS DO THE JOB BETTER, MORE BEAUTIFULLY, AND MORE RESPONSIBLY.

By Deborah Snoonian, P.E.

Think of a summer storm as a form of theater. Lightning shrieks across the sky, thunder reverberates in your chest, raindrops splash onto their earthly targets—a spectacle of heavenly sight and sound whose final act is played out underfoot. Next time you're caught in a thunderstorm, look down at it, not up—what you'll see is runoff. Environmentally speaking, it's a real problem.

The main culprit is "progress": The concrete jungles of increasing urbanization interfere with the normal water cycle. When rainwater falls in forests or on vegetated lands, some of it is used by plants, some percolates through the soil and replenishes aquifers, and some of it evaporates; consequently, there's little or no surface flow over these natural areas. In contrast, a whopping 70 to 90 percent of rainwater that falls on impervious surfaces ends up as runoff.

As rainwater streams down city streets, it picks up sediment, oils, greases, metals, and airborne particulates. This cocktail of pollutants often flows untreated into natural bodies of water, and numerous studies show it's a major cause of impaired water quality and harm to aquatic plants and wildlife. According to the Environmental Protection Agency (EPA), almost half of the nation's waterways are compromised by polluted runoff. Even when there is a treatment program, large surges of runoff entering sewage treatment plants during storms stress these systems to their capacity.

But just as nature punishes, so it can accommodate. Intentionally constructed wetlands, implemented as part of site planning or landscaping, reduce the amount of runoff leaving a site while also cleansing it of harmful substances.

Granted, architects don't design landscapes. Or wetlands. But they do design the buildings and cities that create runoff, meaning that their decisions have implications beyond the projects in their immediate control. Just as environmental laws are turning up the heat on clients to safeguard natural resources, they're also compelling architects to learn strategies such as natural stormwater management to mitigate the overall environmental effects of their work.

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month's architectural record/ AIA Continuing Education article. To receive one AIA/CES LU hour of health, safety, and welfare credit, turn to page 186 and follow the instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. *Explain the problems caused by stormwater runoff from urban areas.*
2. *Explain the importance of wetlands.*
3. *Describe ways to reduce the problems caused by runoff from building sites.*

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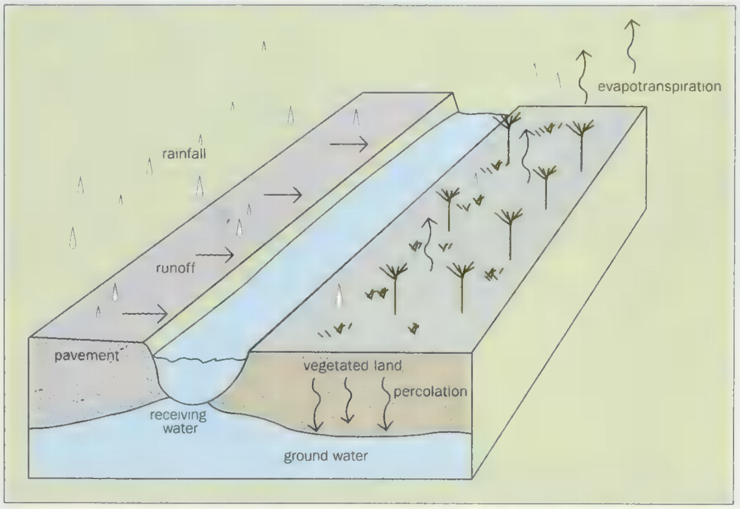


Wetlands are attractive, as well as functional, site elements (top). Rain that falls on hard surfaces, instead of natural land, runs off into waterways (above).

PHOTOGRAPH COURTESY THE BIOENGINEERING GROUP, INC.

Green machines

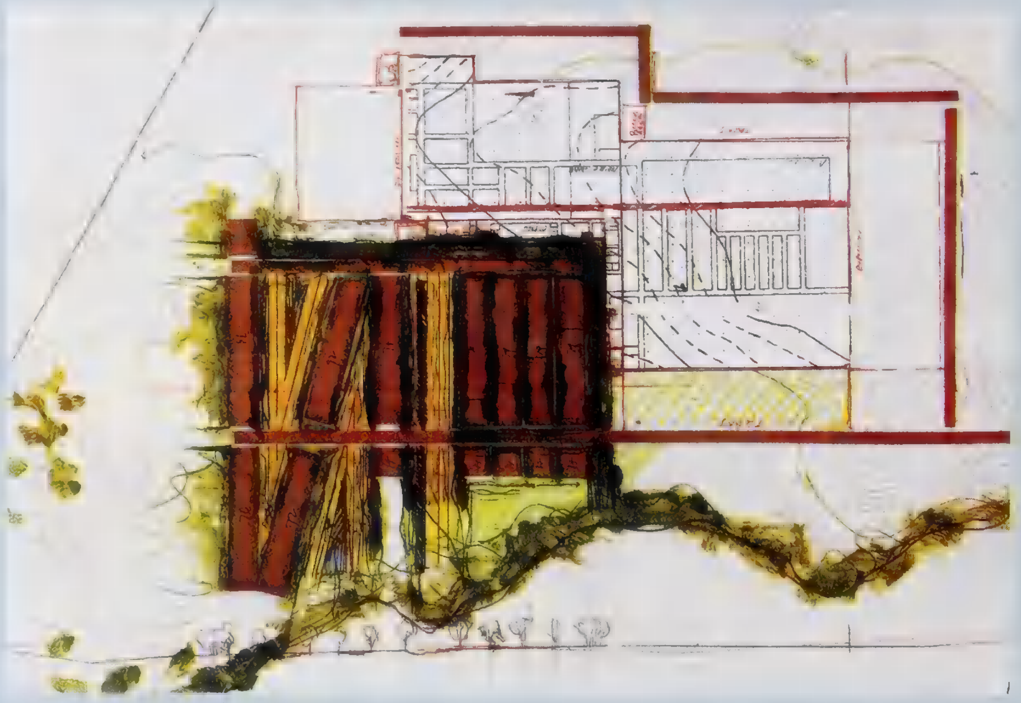
Flood control has long been the bailiwick of civil engineers, who study a building site and then design storm sewers and detention ponds to drain it. These strategies prevent short-term flooding, but they've contributed to the problems we face today. And engineered solutions for stormwater management tend to be, shall we say, clunky. "An eyesore" is what one architect termed them.

Constructed wetlands, on the other hand, are an organic form

CASE STUDY

Herman Miller furniture plant, Cherokee County, Ga.

Firm: *Michael Van Valkenburgh Associates, Inc., New York*



Working with Mack Scogin Merrill Elam Architects, vanguard landscape architecture firm Michael Van Valkenburgh Associates designed the site for a new factory for the leading furniture mavens, located in pristine, hilly farm country north of Atlanta. The program called for an immense flat-roofed factory building, 550 parking spots, and a paved area for staging hundreds of storage trailers. The project team wanted to reduce the volume of runoff leaving the site. "Typically, you take care of the building program requirements, then shunt stormwater in pipes to a retention basin," said Matthew Urbanski, a firm principal. "Instead, we used stormwater management to inform the landscape design, break up the parking areas structurally, and make an experience of going into the factory."

Rather than creating a single large parking lot, Urbanski designed a mosaic of smaller, triangular lots without curbs, which are interspersed with flat terraces planted with wetland vegetation in which water will pool during storms before percolating slowly through the soil. "They're sort of like rice paddies," he observes. One concern was that mosquitoes would breed in the standing water, but the terraces are designed to retain water for no more than seven days—less than the incubation time for a mosquito egg.

Tight rows of small trees of varying species were planted along the terrace edges. Over time, the trees will grow and distinguish the parking areas as site features. Urbanski calls the scheme "a conflation of infrastructure, landscape, and program." The landscape has a repetitive quality to it—a fitting solution for a factory.

Also on the boards is the Athletic Center at the University of Iowa, in conjunction with this year's AIA-award-winning firm Herbert Lewis Kruse Blunck Architecture. The project will involve regrading a 50-acre site, with sculptural forms and grading around a new soccer field dictated by runoff management. Infiltration strips and wetlands will manage parking lot drainage.

of infrastructure: They work with and by the laws of nature, not against them. Generally, wetlands—both natural and man-made—are areas that are filled or saturated with water for all or part of the year. These soggy conditions promote the development of hydric soils, which are characteristic of saturated areas, along with the growth of specially adapted plant species. A bog is a wetland. So are marshes, swamps, and creeks.

Wetlands serve several important ecological functions: Their plants and aquatic life cleanse surface and groundwater; they reduce flooding by acting as natural sponges, storing stormwater and slowly releasing it back to natural waterways; they prevent erosion by stabilizing soil; and they serve as a critical feeding ground and habitat for fish, waterfowl, and other wildlife. As stormwater runoff enters a wetland system, its velocity decreases, which allows sediments and solids to settle out. Plants break down and synthesize organic pollutants, such as oils and greases, and also use metals and minerals in urban runoff as nutrients for growth.

The environmental benefits of wetlands extend beyond the mere site level. Ponds and plant life diminish the "urban heat island" effect, in which impervious surfaces, such as rooftops and parking lots, radiate sunlight back into the atmosphere, increasing the temperature over these regions—a phenomenon that contributes to global climate change.

Obeying nature's ways

The design of constructed wetlands are the purview of specialized consultants (see "Doing It the Natural Way," page 129), who work with architects and landscape architects during the early phases of a project, generally during design development. Their first task is to calculate the "water budget"—not a dollar figure, but the amount of runoff that will leave the site. These calculations are usually made using a worst-case scenario of a storm of known intensity and duration. Next, the size and configuration of the wetland are determined, and its location chosen based on the site's topography and overall plan.

WETLANDS, IN WHICH PLANTS AND AQUATIC LIFE CLEAN WATER NATURALLY, ARE A FORM OF LIVING INFRASTRUCTURE.

The more paved or hard surfaces a building site has, the more runoff it will generate. Since wetlands rely on natural treatment techniques, using them may require changes in the site plan to ensure they function properly. "The first flush of stormwater runoff is usually highest in pollutants," says Georganna Collins, a wetland scientist with Turner

DOING IT THE NATURAL WAY: A wetlands expert spells out the benefits

Constructed wetlands at Fort Devens Federal Medical Center in Devens, Mass., treat stormwater runoff and control erosion.

Can you design a runoff treatment system using Mother Nature's ingenuity? The answer is yes—specialized consultants provide these services. RECORD *asked Wendi Goldsmith, a certified stormwater quality specialist and president of the Bioengineering Group in Salem, Mass., to explain how it's done and why it's important. Goldsmith's firm designs natural runoff-management solutions and provides technical and policy guidance to the EPA on a variety of stormwater issues.*

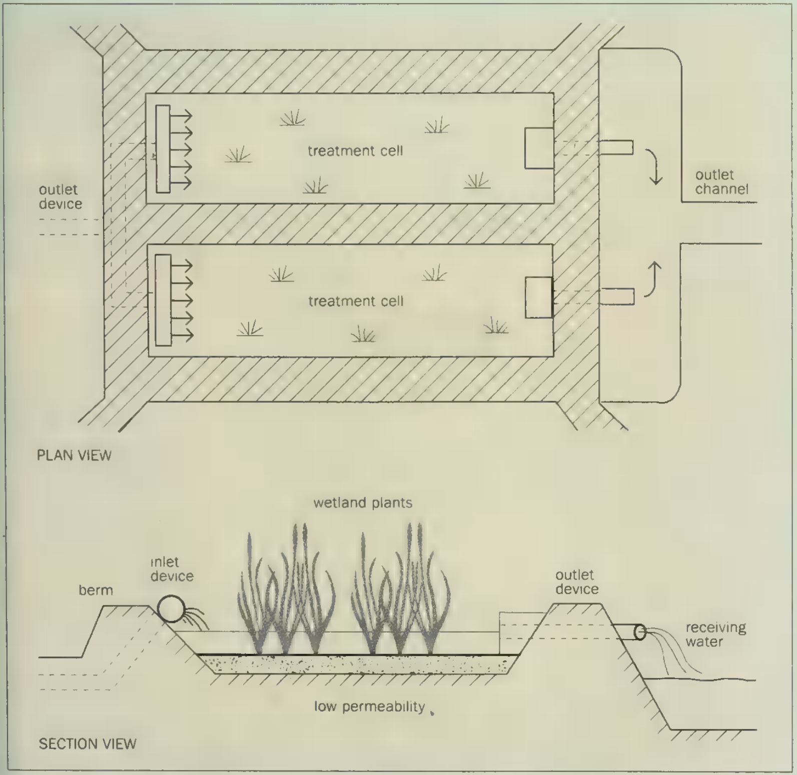
Trained as a geologist, soil scientist, and landscape designer, Goldsmith has an unerring grasp of wetland and watershed science, and she's an avid proponent of making developed sites operate as ecosystems. "A landscape isn't just a pretty place," she says. "It has forms and functions that make it work a certain way to control flooding naturally and rid water of pollutants. When we pave over the landscape, it loses these functions. Where water goes and doesn't go, what it comes into contact with as it flows, how long it takes to move from a pipe to a natural body of water—all these have an effect on water quality." If landscapes were allowed to work the way nature intended, she says, we'd have no need for storm sewers or detention ponds.

Using land treatment is a relatively new concept in the U.S. Before the 1960s, stormwater management meant draining city streets as quickly as possible to prevent flooding, and channeling the runoff to the nearest body of water. The result was ever-larger networks of storm sewers, as urbanization increased to accommodate population growth. When building these networks became too expensive, engineers began using detention ponds to hold runoff before letting it drain to waterways. "We spent a lot of money building and now maintaining a system for water management which Mother Nature was taking care of beforehand," Goldsmith says. Finally, in the 1970s, the scientific community recognized that not only were these practices only marginally effective in preventing flooding, they were also causing significant environmental damage. With the EPA's enactment of the Phase II stormwater rules in December 1999, the problem has garnered an unprecedented level of national attention. The Phase II laws require virtually all developed sites to manage runoff more responsibly. "Every architect and builder needs to have at least a rudimentary understanding of stormwater issues now," she notes.

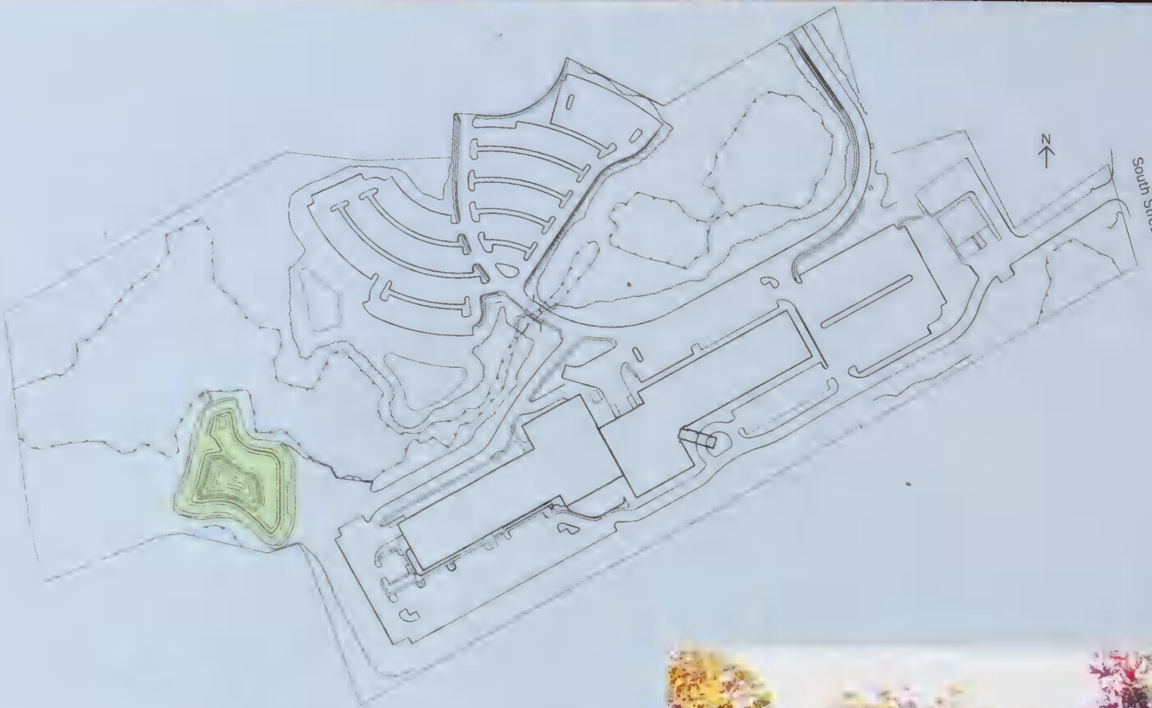
Runoff management should focus on reducing flow and creating landscapes whose hydrology mimics that of natural systems. This means roughly 50 percent of precipitation leaves the site through evapotranspiration (a combination of evaporation and respiration through the leaves of plants), and about 45 percent seeps through soil into groundwater, with no more than 5 percent leaving as runoff. Sustainable watershed hydrology happens naturally in forested and vegetated lands, which Goldsmith calls "multifunctional, self-maintaining, solar-operated water quality treatment systems."

When a constructed wetland is part of a site plan, design parameters such as size and depth are determined based on the site characteristics (area drained, soil type, amount of paved versus unpaved surfaces) and based on the volume of runoff expected in certain weather conditions. But they aren't the sole solution to every runoff problem. Nor do sites have to be entirely covered with vegetation to operate as healthy ecosystems. Goldsmith is a pragmatist. She acknowledges that development will happen, that conventional paving materials and construction methods aren't going away any time soon, and she's quick to point out the variety of techniques that can be used to achieve the right balance. "The best way to manage runoff is to use every square foot of a site wisely," she says. "Green roofs [roofs planted with vegetation] are an excellent way to capture and hold runoff from a rooftop. Porous pavements allow parking lot runoff to percolate through the soil. Water can be captured in underground filtration beds and allowed to trickle back into the ground, or caught in roof cisterns and used for on-site irrigation."

Balance is the operative principle here; unfortunately, urbanization has tipped the scales toward one-dimensional, engineered quick fixes. Goldsmith, whose passion to protect watersheds is clearly articulated in both her words and her firm's work, is glad that regulations and a general heightened awareness of environmental issues is turning the tide against the status quo. "The minute you let water enter a piping system," she muses, "you've basically lost the opportunity to treat it." *DS*



Plan and section views of a typical constructed wetland system.



CASE STUDY

EMC Corporation, Hopkington, Mass.

Company: *Beals and Thomas, Inc., Southborough, Mass.*

A constructed wetland was built at this research and development facility to treat runoff and control flooding for seven and a half acres of paved surfaces.

Runoff first enters a catch basin (not shown here) to slow its velocity and remove some sediment, as well as oils and grease, that floats on the water surface. As it enters the wetland system, the water is further treated by wetland vegetation. "We wanted to pretreat the water so it wouldn't overburden the constructed wetland system during large storms," said Andrea Kendall, an environmental specialist with Beals and Thomas. Her firm completed all the site work for the project.

Following construction, the second phase of the project involves monitoring water quality to ensure compliance with EMC's discharge permit.

Collie & Braden, an environmental planning firm in Houston. "An overly high flow or a high dose of pollutants will kill the plants that treat runoff." To reduce the chance of shocking the system, experts often recommend using vegetated swales or filter strips upstream of a constructed wetland. These features serve to reduce and pretreat runoff.

A dense cover of plant growth is necessary for removing pollutants. Native plants are preferred, but research seems to indicate that controlling the growing conditions, rather than the specific plant species, is the most important criterion of success. Conditions are most fragile when a wetland is first installed, as seeds germinate and plants first establish themselves. Planting seeds or vegetation correctly can be challenging for traditional "mow, blow, and go" landscapers who usually plant large lawns. Andrea Kendall, an environmental specialist with Beals and Thomas, of Southborough, Mass., recalls her experience with one contractor in the Northeast: "After the wetland was installed, we had to go back to the job site because the cattails were floating on the water surface. They hadn't been planted correctly." Those who design wetlands admit that finding qualified landscapers to do site work can be difficult, but they believe service will improve as the systems become more popular.

A DENSE COVER OF PLANT GROWTH IS NECESSARY FOR REMOVING POLLUTANTS AND CONTROLLING RUNOFF.

Natural vegetation also behaves differently from the grass and ornamental plantings of conventional landscaping. "Unlike lawns, which are monocultures that can be irrigated and fertilized to grow uniformly, you can't expect a variety of native plants to propagate at the same rate," explains Matthew Urbanski, a principal with landscape architecture firm Michael Van Valkenburgh Associates in New York. "There's a bit of a ratty period when things are growing in." Ratty periods may be anathema to owners, so when appropriate, architects should work with other team members to accommodate this concern. Often, altering the construction schedule so that landscaping and site elements are completed earlier than usual allows enough time for vegetation to establish itself.

The ways of the wise

Natural runoff management techniques look all the more attractive considering the current regulatory environment (see "Regulations for

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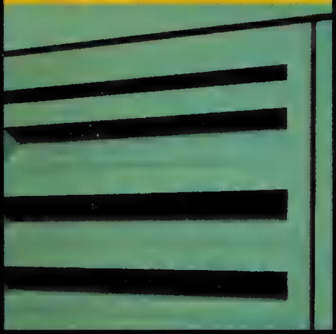

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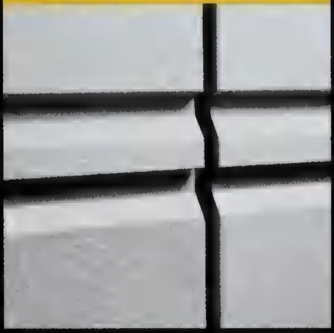

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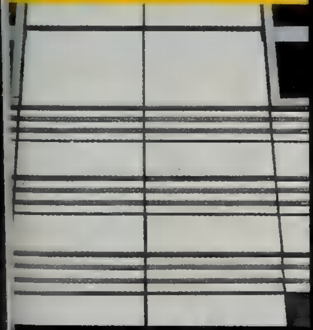

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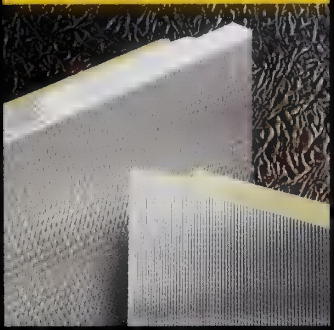

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CASE STUDY

Cottonwood Creek Relocation, San Marcos, Tex.

Company: *Turner Collie & Braden, Inc., Houston*

Developers were required to reestablish a creek displaced by the expansion of a nearby shopping mall. Cottonwood Creek receives runoff from not only the mall's roof and parking lot, but also from I-35, a major highway, and from a sand-and gravel-making operation located not far upstream of the site.

The creek receives runoff from a variety of sources, then drains into the San Marcos River—one of the most pristine waterways in Texas hill country. "The local economy really depends on the tourism generated by the river—glass-bottomed boats, fishing, and so forth," said Georganna Colllins, a wetland scientist who helped design the project. "We had to make sure the water leaving Cottonwood Creek was as clean or cleaner than it was before the mall was expanded."

The project team decided that the best way to accomplish this goal was to move Cottonwood Creek—literally (see photo at right). "We drained the creek and salvaged all its organisms: aquatic life, vegetation, even the soil and large trees whose roots grew under the streambed," said Collins. If done right, moving the stream flora and fauna meant less time would be needed for the wetland to reestablish itself in a new location.

The project hit a snag when the landscape contractor walked off the job after a few days, citing the idea as crazy. Luckily, the project's general contractor stepped up to the challenge of relocating the stream. Within six weeks, plant and animal life had reestablished itself in the new creek location.

The monitoring of Cottonwood Creek's water quality is ongoing. So far, the wetlands are cleaning runoff to permitted standards.

Runoff and Wetlands," page 134). "Local governments and communities are much more environmentally savvy than ever before," says Wendi Goldsmith, a landscape designer and president of the Bioengineering Group in Salem, Mass. "Using wetlands can be a way for developers to endear themselves to citizens who review their proposals." It can also be a way for architects to endear themselves to clients—Goldsmith notes that the process often goes more quickly when natural treatment systems are part of the overall plan.

USING WETLANDS TO MANAGE RUNOFF CAN REDUCE THE NEED FOR SEWER LINES AND OTHER INFRASTRUCTURE.

Land-based treatment can also reduce the need for conventional infrastructure. Lance Davis, AIA, of RTKL Associates in Washington, D.C., recommended wetlands and a green roof (a roof planted with vegetation to reduce runoff) for the upcoming renovation of the Walter Reed Community Center in Arlington, Va. "It turns out we won't have to install pipes or storm sewers, which is a huge benefit, because it offset the cost of implementing the green features," he says. "And those green features were ones our clients really wanted to incorporate."

The aesthetic value of these systems can't be overlooked either; natural treatment systems can inform building design in a way that traditional civil infrastructure doesn't. "Most people would much rather look at a vegetated pond than a rip-rap-lined detention basin," said Jon Calabria, a landscape architect with North Carolina State University. Architects can use wetlands as a stimulus for incorporating design elements that allow users to see, access, and enjoy outdoor features.

As the population continues to burgeon, open space gets more and more precious—so using building sites to their fullest potential has become a more pressing concern for architects. "Our principle is that every feature of a project, including the landscape, should serve more than just one purpose," says Kevin Pierce, AIA, a principal with Farr Associates, an architecture and planning firm in Chicago. One of his projects—a grade school at Prairie Crossing, a self-labeled conservation community north of Chicago—features wetland treatment for runoff. "The classrooms are on grade with the wetland, which is at the edge of the building," he explains, "so it's not only a site amenity—the students can also walk right out to it for a science lesson." Double duty, indeed.

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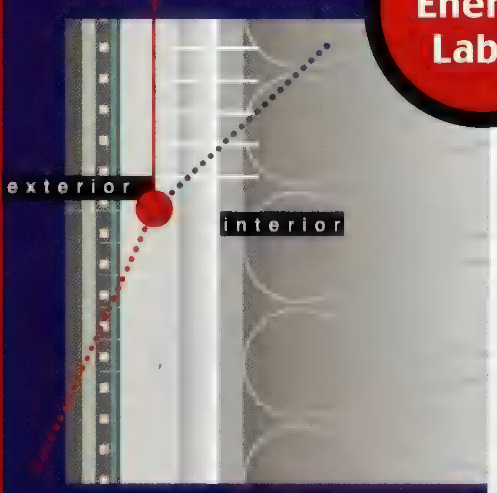

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A 'growing' trend

Though it's not yet typical for architects or even landscape architects to concern themselves with stormwater management, the atmosphere is slowly shifting. "It's a big conceptual and financial leap for clients to understand that the establishment of the landscape can actually be part of the infrastructure—not just a treatment that's applied to the land after the building is complete," says Urbanski. "It changes the way building programs are planned." The confluence and increasing interdependence of built and natural environments is a trend or, more correctly, a resurgence that is still in the making (see "Landscape Urbanism," page 66).

Architects may be the catalysts for making natural treatment systems more popular, because using them requires action early in a project, when the architect's involvement is highest. The project budget might need reshuffling, for instance, to allocate adequate funds for wetland design. "People tend to view and fund the building program, the supporting infrastructure, and the landscape as separate elements," says Urbanski. "But managing runoff innovatively means you have to treat them as what they really are—interrelated systems."

It's not unlikely that today's innovations will become tomorrow's status quo. Constructed wetlands aren't just a feel-good solution or a way to assuage environmentalists—they're a way for architects to showcase their inventiveness and increase their credibility and value to clients and the public. Cutting-edge practitioners who have walked the talk know that this is one key to remaining relevant in a society that increasingly questions their role. "If architects and landscape designers can make the landscape into something beautiful, something people can appreciate, and something that's also ecologically beneficial," says Urbanski, "then we've succeeded." ■

Regulations for Runoff and Wetlands

Stormwater discharges are regulated by the EPA under the Clean Water Act (CWA) through the National Pollutant Discharge Elimination System (NPDES). Under NPDES, the EPA or an authorized state agency issues a permit to a municipality or private industry limiting the type and amount of pollution entering natural bodies of water.

The NPDES program first focused on controlling point sources of pollution, such as discharge from a manufacturing facility. But unlike most industrial activities, urban runoff is a nonpoint source—one that has no single point of origin, or doesn't enter a waterway through a single outlet. Regulators are now focusing increasingly on controlling these nonpoint sources. The Phase I and Phase II NPDES rules require regulated entities to obtain permits and use Best Management Practices (BMPs), such as constructed wetlands, to keep pollutants out of runoff.

Alteration of natural wetlands is regulated under Section 404 of the CWA and administered by the U.S. Army Corps of Engineers. Owners or developers must apply for a special permit when construction will disturb natural wetlands. Surviving the complex application process has no doubt taxed the sanity of many an architect overseeing construction. Often, developers must build new or enhance existing wetlands to restore functions lost during construction—a concept known as mitigation. In a controversial practice called wetland banking, developers can even build new wetlands to use as "credits" against future projects that may destroy natural ones. *DS*

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INSTRUCTIONS

- **Read the article "Drain It Right: Wetlands for Managing Runoff" using the learning objectives provided.**
- **Complete the questions below, then check your answers [page 186].**
- **Fill out and submit the AIA/CES education reporting form [page 186] or file the form on ARCHITECTURAL RECORD's Web site at www.architecturalrecord.com to receive one AIA learning unit.**

QUESTIONS

1. What environmental problems have been created by increasing urbanization?

2. How do wetlands reduce problems of stormwater runoff?

3. Why is a site's water budget calculated?

4. What can architects do to make sure natural vegetation thrives in constructed wetlands?

5. What are the political and economic implications of using intentionally constructed wetlands?

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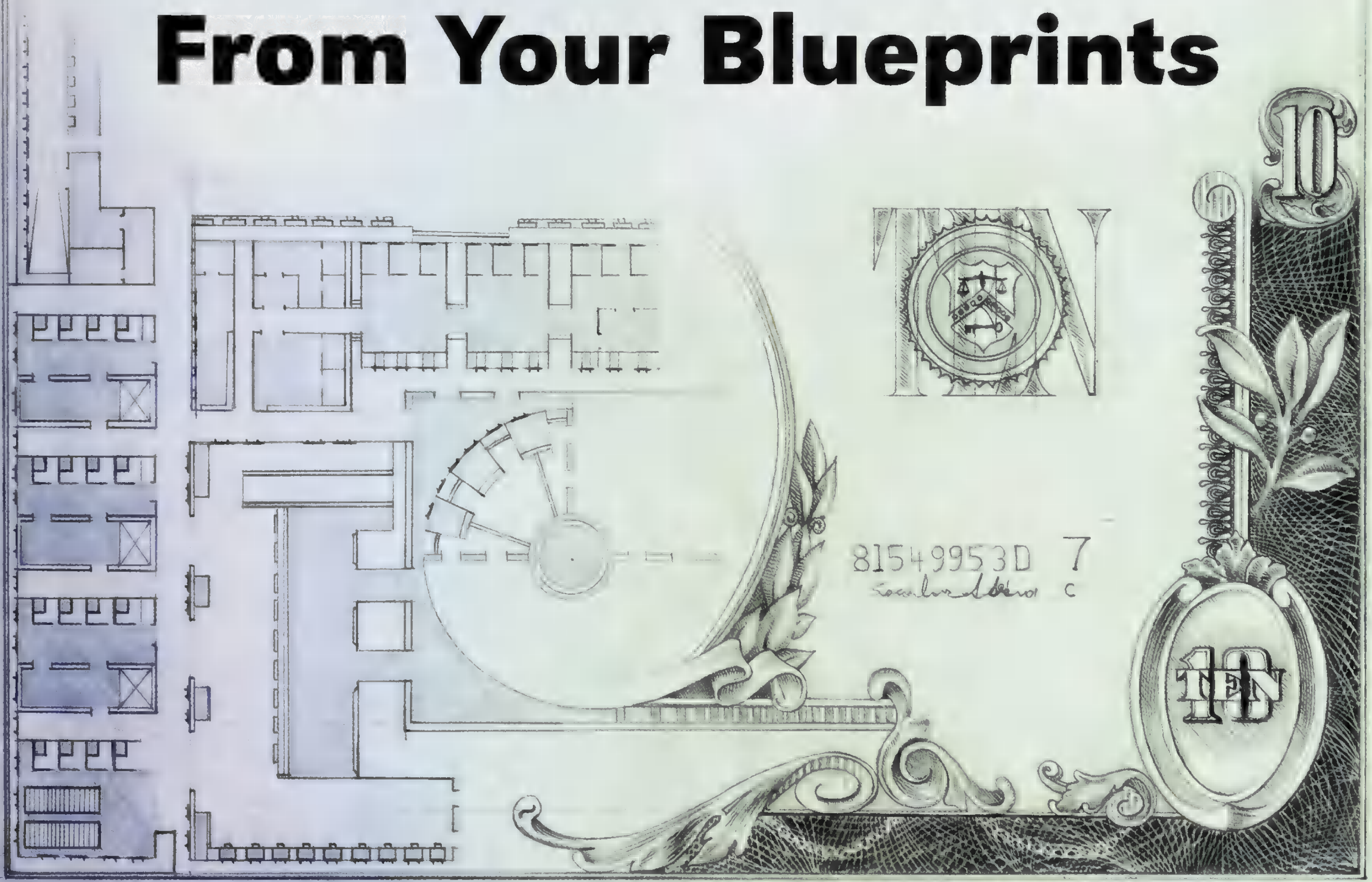

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Combining project and practice management

By Jerry Laiserin, FAIA

With the financial mania for e-business behind us, architects can focus on the real promise of the Internet: to share firm and project data online in a variety of methods and for a variety of purposes, using standard, familiar Web browser software. The problem is that information transmitted online comes in many bewildering forms: public Web sites, intranets, extranets, project-specific Web sites, and so on. To their dismay, firms that wish to become Web-enabled find they must reorganize and republish their data according to the type of "Net" they are on (Inter/intra/extra), rather than according to the needs of users or the logic of content.

Whether the technology of practice consists of ruling pens on linen or the latest 3D computer interface, the business of architecture still revolves around people and projects, not programs and protocols. Architects don't really want extranets or intranets—they want a way to share project and practice information rapidly and securely with appropriate team members. An ideal system would seamlessly merge the best features of a firm's internal Web site or intranet [MARCH 1999, page 39], its project-specific Web sites or extranets [SEPTEMBER 1999, page 53], and its third-party Web services [MARCH 2001, page 173], all using information from a shared database [JANUARY 2000, page 149]. "Many architects think that the collapse of the dot-coms means they don't have to pay attention to Internet technology," says Jonathan Cohen, AIA, author of *Communication and Design with the Internet.* "But the profession hasn't yet tapped into the real opportunity to leverage all this information."

Contributing editor Jerry Laiserin, FAIA, provides strategic consulting services to architects and their technology providers.

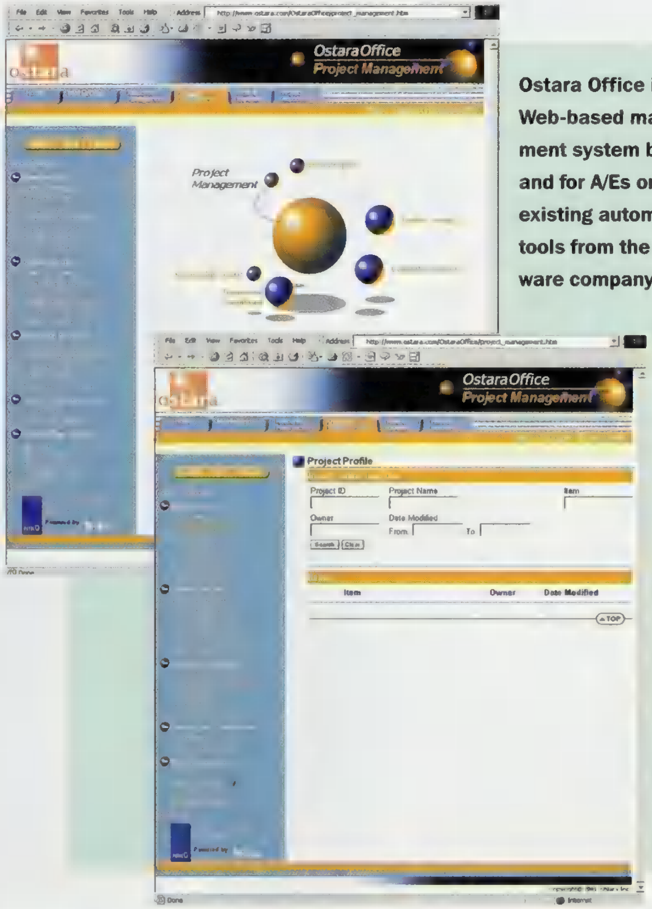
WWW For more information on technology for architects, including reviews, vendor lists, and links, go to Digital Architect at **www.architecturalrecord.com**

IMAGE COURTESY OSTARA, INC.

Depending on a firm's size and goals, diverse options are available. Extremely large firms can develop their own software in-house, or they can acquire enterprise software that's used by large corporations. Mid-size and large firms can explore an emerging category of Web-based software called professional services automation (PSA). Smaller firms may be able to leverage existing Internet technology for sharing programs to enjoy many of the same benefits as their larger peers. Or firms may wish to mix and match these solutions to fit their needs.

Living large

Starting in the mid-1990s, many multioffice firms began to unify their practices by installing wide-area networks (WANs). The ability to communicate among far-flung groups created a demand for software that would enable groups to collaborate. The solution was software known as groupware, best exemplified by IBM's Lotus Notes.



Ostara Office is a Web-based management system built by and for A/Es on top of existing automation tools from the software company Niku.

Notes and its Web-enabled cousin, Domino, consist of multiple synchronized databases capable of storing and managing diverse content—such as e-mail, budgets, project schedules, and CAD files. Burt Hill Kosar Rittelmann, a 350-person firm with headquarters in Butler, Pa., customized its Notes system into a comprehensive practice management tool. Mark Dietrick, AIA, the firm's chief information officer (CIO), adds, "Today, we replicate some of our Notes databases outside our fire wall, so they are accessible to clients and consultants for project management purposes."

While a Notes/Domino system works well as a single-source intranet/extranet, the software is demanding on network servers and requires specialized programmers and skilled database administrators to customize its features in order to realize the software's full potential. For large firms, another approach to practice and project integration is building an intranet on nonproprietary, easily programmed Web software such as HTML and adding off-the-shelf project extranet software, such as ActiveProject from Framework Technology. "Because Framework uses a Web browser interface and runs internally on the same networks as our intranet, we have no problem with data access," says NBBJ vice president Connie Ricer, who is based in Columbus, Ohio, and who manages IT for the

Digital Architect

firm's eastern offices. Everyone at NBBJ can access practice and project information without having to log on to an external server, as would be the case with extranet services such as buzzsaw.com, which require users to log on to special sites to access information stored outside the company.

Professional services automation

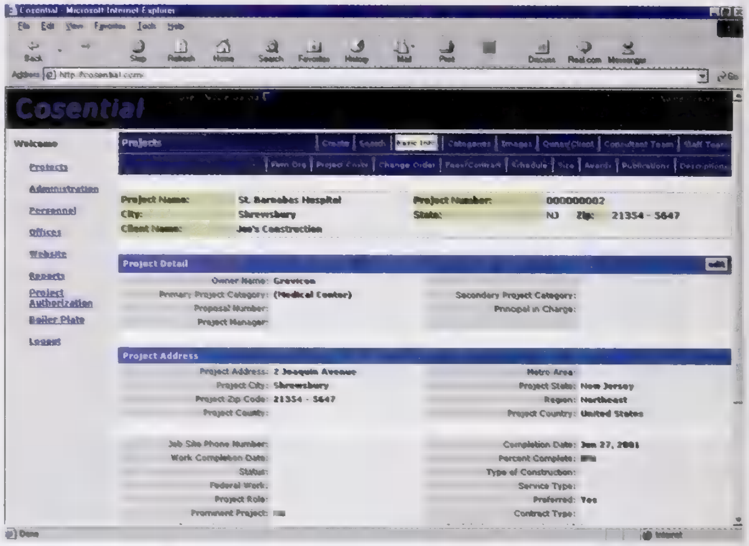
Project-centered professions such as management consulting, accounting, and law, have many of the same technology and integration needs as architectural firms. For example, client information has to be managed from initial contact through proposals, contracts, mobilization of the project team, performance of the work, and post-project follow-up. A new class of Internet-based software has been developed to help automate these functions. Companies like Changepoint, Evolve, Portera, and Niku offer PSA solutions in a variety of career fields, from computer consulting to healthcare management. None have yet tailored their offerings for architects, according to John Thomas, AIA, a principal with BAR Architects in San Francisco, who looked closely at Niku and several other programs for his 85-person firm. Like many other design firms, BAR relies on an assortment of internally developed, unconnected FileMaker Pro databases for many of the functions that a comprehensive PSA solution would provide.

MBT Architecture, also of San Francisco, anxiously awaits the proposed PSA solution from Deltek Systems, which gained a leading market share of A/E accounting and marketing programs by acquiring Harper and Shuman, Semaphore, and RFP. Russell Drinker, MBT's chief operating officer, says, "We're looking to pull together all our FileMaker databases with our Harper and Shuman financial software," but the firm balked at the $100,000-plus price tag for custom integration. "We have so much client and project information in our existing financial system that it makes sense to look at an overall practice automation system from the same company."

One advantage of Internet technology, however, is its ability to interface with preexisting software such as financial management. This is the approach taken by two PSA startups that focus on the needs of architects and engineers. Cosential, based in Danbury, Conn., and best known as the developer of the DesignArchitecture.com Web site and e-zine, is rolling out the Cosential System, a series of externally hosted Web software modules for functions ranging from contact management and proposal generation to Web site publishing and project extranet collaboration. Because all of Cosential's modules work together as a system, with all of a firm's information stored in a single database, it's possible to mix and match modules from the Cosential System with legacy software such as project accounting.

Cosential's customers often start by using just one or two modules, such as Web publishing or marketing management [JUNE 2000, page 190] and expand their data integration from there. For example, Susan Moran, manager of marketing communications for HLW International in New York, uses the Cosential publishing and data management tools for her firm's public Web site, but she expects that her firm will follow shortly with both the intranet and extranet components.

Perkins Eastman Architects, another large firm, has started working with Cosential to build an intranet that also will use its contact manager, according to Martin Siefering, AIA, Perkins Eastman's CIO. "Although our Web site is not on the current development schedule, we will eventually ask Cosential to host it and support it from their database solution. We looked at Niku and at Deltek but thought that Cosential had a better understanding of our business model and proposed a more cost-effective solution."



Project Name: St. Barnabas Hospital
Project Number: 000000002
City: Shrewsbury
State: NJ Zip: 21354 - 5647
Client Name: Joe's Construction

Project Detail

Owner Name: Grevtron
Primary Project Category: (Medical Center)
Secondary Project Category:
Proposal Number:
Principal in Charge:
Project Manager:

Project Address

Project Address: 2 Joaquin Avenue
Metro Area:
Project City: Shrewsbury
Project State: New Jersey
Project Zip Code: 21354 - 5647
Region: Northeast
Project County:
Project Country: United States
Job Site Phone Number:
Completion Date: Jan 27, 2001
Work Completion Date:
Percent Complete:
Status:
Type of Construction:
Federal Work:
Service Type:
Project Role:
Preferred: Yes
Prominent Project:
Contract Type:

The Cosential System is a suite of software modules for databases, Web sites, extranets, contacts, and so forth, accessible through a Web interface.

An emerging competitor for the Cosential System is the Ostara Office, from New York–based Ostara, Inc. Founded by tech-savvy architects and engineers frustrated by the scarcity of software tailored to their needs, Ostara approaches development differently than Cosential does. Vice president Pierre Levesque, AIA, explains that the company spent nearly two years designing a comprehensive practice and project management system to be powered by general-purpose PSA software. "Rather than reinvent the wheel and try to build a contact manager or proposal-tracking database from scratch, we add value by creating a very architect-aware workflow and information flow on top of a proven system from an established, publicly held company. Roughly 60 percent of Ostara Office builds on the PSA platform from Niku, and we customized the rest." With some individual modules available now and the complete system expected before year-end, the Ostara Office appears to offer the best of both worlds—architecture-specific features previously lacking in Niku, plus firm-specific customization of established software.

Can't we just get along?

Kevin J. Connolly, AIA, owner of a small firm in Milwaukee, finds the prospect of new project and practice integration and automation tools both exciting and intimidating: exciting because of the enhanced productivity and client service promised by such tools; but intimidating because the benefits are beyond the technical grasp or financial reality of thousands of small firms like his own. Connolly believes that small firms have the opportunity to exploit Internet technology to "improve both the product and the process of architecture" through a collaborative system of common tools, administrative resources, and an "information ecosystem" shared by noncompeting, independently owned firms. He's laid out the features and benefits of his vision at Triglyph.net and Triglyph.org, an organization he founded to bring to small firms the kind of resources available to large firms; he reports that he has 50 firms "interested in participating" in the launch of such a service.

Although the search for integrated information solutions for architectural practice offers no easy, off-the-shelf answers in the short term, it's clear that alternative paths are open to firms of all sizes. Every forward-looking firm should start or enhance its practice automation strategy within the coming year. ■

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SPECIFYING FOR PERFORMANCE: UNDERSTANDING KEY SPECIFICATION CRITERIA FOR WALLS, CEILINGS AND FLOORS

by: Richard Master, AIA
Manager, Architectural Systems
USG Corporation

Does it meet code? Does it comply with ASTM standards? Is it UL classified?

These are some of the key specification issues architects must address when selecting systems and materials for wall, ceiling and floor assemblies.

AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION Series

Use the learning objectives below to focus your study as you read **SPECIFYING FOR PERFORMANCE: UNDERSTANDING KEY SPECIFICATION CRITERIA FOR WALLS, CEILINGS AND FLOORS**. To earn one AIA/CES Learning Unit including one hour of health safety credit, answer the questions on page 175 and follow he reporting instructions on page 186 or, use the Continuing Education self report form located at www.architecturalrecord.com.

LEARNING OBJECTIVES:

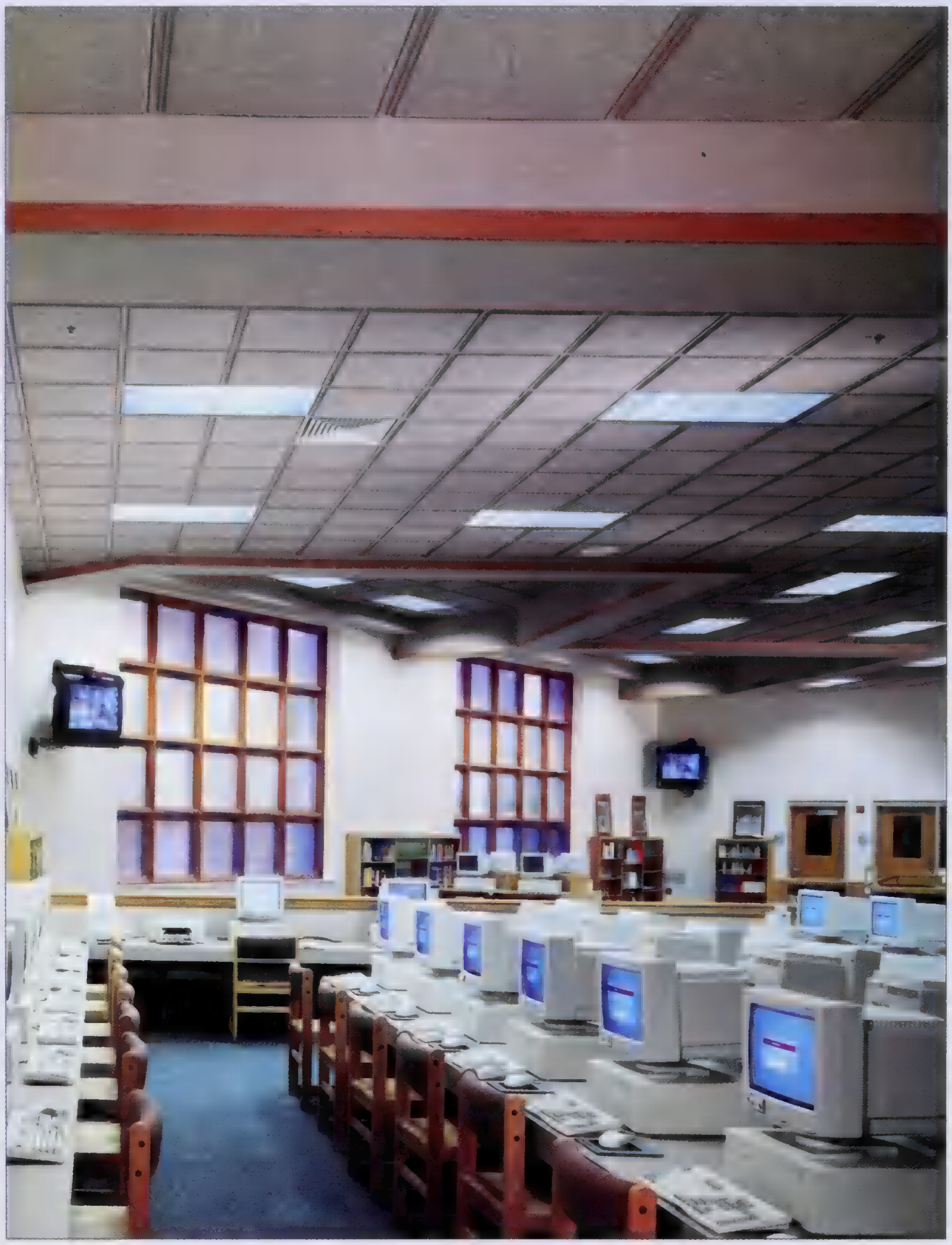
- Describe key performance criteria for wall, ceiling and floor assemblies.
- Explain what roles ASTM and UL play in the specification process.
- Describe why modified ASTM tests are used.

While codes and standards may sometimes seem to be more of a hindrance than a help to design creativity, successful architects learn to work *with* these criteria, not against them. They also develop an understanding of the key attributes that determine what materials and systems deliver the best results for their project requirements.

DEVELOPING STANDARDS

Performance standards for wall, ceiling and floor assemblies are based on requirements established by the major code bodies, such as BOCA (The Building Officials and Code Administrators International), ICBO (The International Conference of Building Officials), SBBCI (The Southern Building Code Conference International) and ICC (The International Code Council). Testing procedures to define the minimum performance criteria needed to meet these code requirements are developed by ASTM (the American Society for Testing and Materials). ASTM does not, however, actually conduct tests or verify that any specific product or system meets the standards it establishes. That work is accomplished by independent verification companies such as UL (Underwriters Laboratories, Inc.).

Specifiers should be aware that manufacturers frequently have to use modified ASTM testing protocols as they bring products and systems to market. This is usually done to create performance standards where none currently exists or when existing ASTM test protocols do not apply fully to the unique features or attributes of a product or system. When dealing with modified ASTM tests, know what the modifications are and why they were done. Modified tests do provide valuable performance information, but they can also make it more difficult to compare products and systems. Two manufacturers offering similar products may publish two very different modified test results that demonstrate two very different product performance capabilities. Don't assume you're comparing apples to apples.



All ceiling grid systems from USG are classified for load compliance by UL.

DOES CEILING GRID MEET ASTM LOAD COMPLIANCE?

Just because there are published ASTM or UL standards for a particular building system, does that mean that every manufacturer that makes such a system complies with those standards?

Without third-party verification, the answer is sometimes unclear.

Consider ceiling grid. Per ASTM C635, grid must meet minimal standards for load compliance. These standards are designed to assure ceiling structural integrity and minimize grid deflection problems.

While all manufacturers state that their products comply with ASTM C635, none were obtaining third-party verification that those standards were actually being met. That changed in August 2001, when USG began a UL classification program to verify load compliance for all of its grid products. Under the program, UL representatives visit and randomly select grid products from each of USG's four North American suspension system manufacturing plants. The products are then tested for deflection performance, providing specifiers with verifiable third-party data.

Structural integrity is one of the key factors that architects and specifiers must consider in selecting a ceiling system. The issue is central to long-term aesthetics and expected performance, and provides a front-line defense against deflection problems.

Fire testing is a critical performance criterion for wall, ceiling and floor assemblies. Here, a floor-ceiling assembly is removed from a testing furnace.

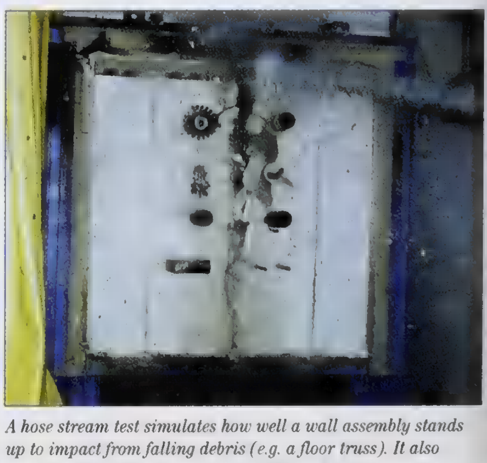
FIRE RESISTANCE

For commercial construction, interior gypsum board walls must meet one- , two- , three- or four-hour fire ratings, as required by local codes. These ratings are established by ASTM E119 (also UL 263 and NFPA 251) test standards.

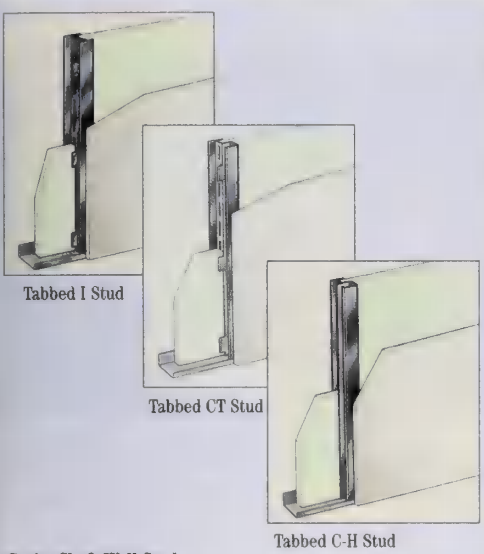
It's important to realize that these testing standards do not measure performance of just the gypsum board panels. Even though gypsum board is naturally fire resistant, it has no intrinsic fire rating. Rather, fire ratings are established by testing entire assemblies, including gypsum board, studs, fasteners and other components.

ASTM E119 measures two critical performance criteria. One is heat transfer. The goal of this test is to determine at what temperature the surface or adjacent materials on the side of the assembly not exposed to the heat source combust.

ASTM E119 also measures structural integrity via a "hose stream" test. Despite its name, this test does not



A hose stream test simulates how well a wall assembly stands up to impact from falling debris (e.g. a floor truss). It also measures the cooling and eroding effects of water.



Cavity Shaft Wall Studs
Unlike other cavity shaft wall studs that use tabs for panel retention, the USG Steel C-H Stud (right) provides a more secure grip to support liner panels, ensuring superior panel retention and better protection against potential breaches in the system's fire integrity.

WHERE FIRE RESISTANCE COUNTS MOST

Cavity shaft walls are engineered wall systems that deliver critical fire resistance and structural integrity around stairwells, elevators and other building enclosures. During a fire, they allow occupants to exit the building safely using stairwells, and they protect the elevators, allowing firefighters access to all areas of the building.

While a variety of materials can be used to construct shaft walls, gypsum partition systems are favored due to their proven track record, lightweight design and quick installation. Because a gypsum-based shaft wall system is more than the sum of its parts, architects should specify a single-source system that offers tested and proven performance. It must include both the components (gypsum shaft wall liner panels, face gypsum panels, and steel studs) and comprehensive fire and sound test data.

One option, which is widely used on low-, mid- and high-rise construction, is the USG Cavity Shaft Wall System. It is a single-source system consisting of gypsum liner panels, gypsum board, specially designed C-H Studs and J-Runners. It provides UL-tested one- to four-hour fire resistance ratings and sound transmission class ratings up to 52 STC, and offers architectural detailing for various applications. The design of the C-H Studs permits greater limiting heights, enhanced deflection resistance and better panel retention than competing systems. It also makes the fire and sound performance possible, while withstanding intermittent air pressure loads ranging from 5 up to 15 psf.

No matter what gypsum-based system is used, maximum wall height is a key structural consideration. For elevator shaft walls, designers must first calculate wind loads, based on elevator cab speed and the number of elevators per shaft. Limiting heights are then determined by factoring in deflection limits, bending stress of the studs and end reaction shear.

measure what happens when a wall is hit with water from a fire hose. Rather, the test uses a hose stream to simulate how well the assembly stands up to impact from falling debris (e.g. a floor truss). It also measures the cooling and eroding effects of water.

The hose stream test is conducted after the assembly has been exposed to fire for one-half its intended rating. The duration of the test depends on the desired rating. A two-hour fire-rated wall, for example, must withstand the hose stream for 2-1/2 minutes without having water protrude beyond the plane of the wall, while a one-hour wall must stand up for one minute.

Another key standard related to fire resistance is ASTM E84, which measures the flame spread and smoke density of surface materials. According to the National Fire Protection Association, (NFPA), a Class A Interior Wall and Ceiling Finish has a flame spread rating of 25 or less and a smoke density developed rating of 450 or less.

STRUCTURAL INTEGRITY

A range of criteria covers the structural performance and capacity of wall and ceiling systems. Some of these factors are covered by ASTM standards, such as deflection in ceiling grid, which is detailed in ASTM C635. Other criteria, such as limiting heights, are not. Limiting heights measure the slender ratio of a wall partition as it relates to span (height) and the load capability of individual structural components (studs, joists, etc.). Generally speaking, structural performance is affected by a variety of factors, including the required number and spacing of screws, the thickness and spacing of metal framing, and bracing. Eccentric loads caused by wall-mounted shelving and fixtures, lighting and other accessories must also be considered. Depending on the location and type of construction, shear forces from wind and earthquakes may also come into play.

SOUND CONTROL

The technology of sound control is highly complex, and pitfalls can await the designer who does not give it careful attention. Sound control is not covered by most building codes. Rather, it is driven largely by customer satisfaction. Factors that must be considered include background noise levels, flanking sound paths, the combination of materials in each assembly, the combination of systems in the space and even the profile of the sounds to be attenuated. Especially confusing is the process for determining how various components – floors, ceilings, partitions, wall openings and so on – work together to meet a given sound isolation criterion for the composite construction.

When sound control is a priority, it may be advisable to hire an acoustical consultant to ensure that the design meets desired performance criteria. However, all specifiers should be familiar with basic sound control terminology and measures. Following are some terms commonly used by acousticians and sound control experts.

Because it expands as it sets, LEVELROCK Brand Floor Underlayment enhances sound control by sealing gaps and cracks. When installed over an acoustical mat, as shown here, the poured gypsum flooring also decouples the floor from the ceiling membrane, further enhancing sound control.

SEALING FLOORS FOR SOUND CONTROL

The science of sound control in building design is complex, yet many of the principles behind good acoustics are relatively straightforward.

One of the most basic – and most important – rules of good sound control is to seal all air gaps in wall, ceiling and floor systems. The impact can be significant. For example, a 1/4-inch perimeter crack surrounding a 96-sq.-ft. partition system represents an approximate 1-sq.-ft. hole. Assuming that the STC rating for the partition is 53 STC, the perimeter crack reduces actual STC performance to 29 – a huge reduction in acoustical performance. This is one reason why a product such as LEVELROCK™ Brand Floor Underlayment provides superior sound control. This poured gypsum floor underlayment installs quickly and provides industry-leading compressive strengths. Unlike portland cement-based underlayments that contract as they set, LEVELROCK Brand underlayment finds – and fills – gaps and cracks along wall intersections and penetrations. The product can be used with acoustical mats for even greater noise reduction.

ASTM Standard	Test Method
C473	Physical testing of gypsum panel products
E84	Surface burning characteristics of building materials (flame spread/smoke)
E90	Laboratory measurement of airborne sound transmission (STC) *
E96	Water vapor transmission of materials (permeance)
E119	Fire tests of building construction and materials (hourly ratings)
E136	Behavior of materials in a vertical tube furnace at 750°C (noncombustibility)
E492	Laboratory measurement of impact sound transmission of floor/ceilings (IIC)
E695	Measuring relative resistance of wall, floor and roof construction to impact
E814	Fire tests of through-penetration fire stops

- *Sound Transmission Class (STC)* is the single-number rating that is used to characterize the sound insulating value of a "partition," which can be a wall or floor/ceiling. It measures how much sound will be reduced when traveling through the partition. The higher the rating, the less sound that is transmitted through the assembly.
- *Ceiling Attenuation Class (CAC)* measures how much sound energy will be dissipated when it is transmitted through the ceiling of one room into an adjacent room through a shared plenum. Like STC, the higher the rating, the less sound that is transmitted.
- *Noise Reduction Coefficient (NRC)* measures sound absorption of a specific material. It can range from 0.00 to 1.00. Again, the higher the rating, the more sound that is absorbed.
- *Articulation Index (AI)* measures the degree of privacy between two locations. It is an adaptable measurement that can be used in open or closed office spaces, and accommodates any speech or background noise level.
- *Flanking Sound* refers to sound leakage. Elements that lead to flanking include improperly sealed floor and ceiling junctions, connecting ductwork, poor door seals and electrical outlets.

ABUSE RESISTANCE

Given the fact that the design life of most modern buildings is more than 50 years, specifying partitions that deliver appropriate levels of abuse resistance offers substantial construction life-cycle benefits. ASTM is in the initial stages of reviewing various test methods to measure abuse resistance, but until standards are established, specifiers must rely on data from individual manufacturers.

USG has developed one of the more detailed rating systems for defining and measuring wall system abuse resistance. This system, coupled with the ASTM evaluation, may provide a model for future industry standards.

The USG method defines partitions by their ability to resist abrasion, indentation and hard-body and soft-body impact under simulated "real world" conditions. Systems are then classified into five categories:

- *Light-duty* is a basic upgrade over standard drywall.
- *Moderate-duty* provides resistance to incidental surface and impact damage.
- *Heavy-duty* provides resistance to heavy surface and impact abuse.
- *Extreme-duty* provides resistance to extreme levels of impact and damage.
- *Security* is for areas requiring forced entry and ballistic resistance.

Other manufacturers use different abuse-resistance criteria and testing procedures. When comparing abuse-resistant products and systems, make sure manufacturers are using test methods that accurately measure performance, understand what test modifications are in place and select the system that best meets the real-world conditions anticipated in the project.

OTHER PERFORMANCE CRITERIA

This article has only touched on some of the basic specification performance issues relative to fire, structural integrity, sound control and abuse. There are, of course, a multitude of other performance criteria that must be considered during the design process. Factors such as water and moisture resistance, light reflectance, cleanability and maintenance affect the performance of wall, ceiling and floor systems and should be given proper attention during design.

In the end, successful specifications often boil down to researching relevant performance issues and making choices based on substantiated data. By considering code requirements during initial project planning, architects can incorporate them into the creative design process. This strategy ensures that the structure meets the desired performance standards, as well as the expectations of the client, and complies with all relevant code requirements.

ABOUT USG

USG is a Fortune 500 company with subsidiaries that are market leaders in their key product groups: gypsum wallboard, joint compound and related gypsum products; cement board; gypsum fiber panels; ceiling tile and grid; and building products distribution.

For more information about the company's wall, ceiling and flooring products and systems, write USG at P.O. Box 806278, Chicago, IL 60680-4124, call USG's Customer Service Department at 1-800-USG-4YOU or visit the company's Web site at www.usg.com.

LEARNING OBJECTIVES

- Describe key performance criteria for wall, ceiling and floor assemblies.
- Explain what roles ASTM and UL play in the specification process.
- Describe why modified ASTM tests are used.

INSTRUCTIONS:

Refer to the learning objectives above. Complete the questions below. Then turn to page 175 and check your answers. Fill out the self report form on page 186 and submit it or use the Continuing Education self report form on *Record's* web site - www.architecturalrecord.com - to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS:

1. Name four key specification criteria that apply to walls, ceilings and floors and briefly explain the importance of each.

2. What roles do ASTM (the American Society for Testing and Materials) and independent verification agencies such as UL (Underwriters Laboratories) play in the specification process?

3. Why are modified ASTM testing protocols used?

4. What are the two critical performance criteria measured by ASTM E119?

5. What is flanking sound?

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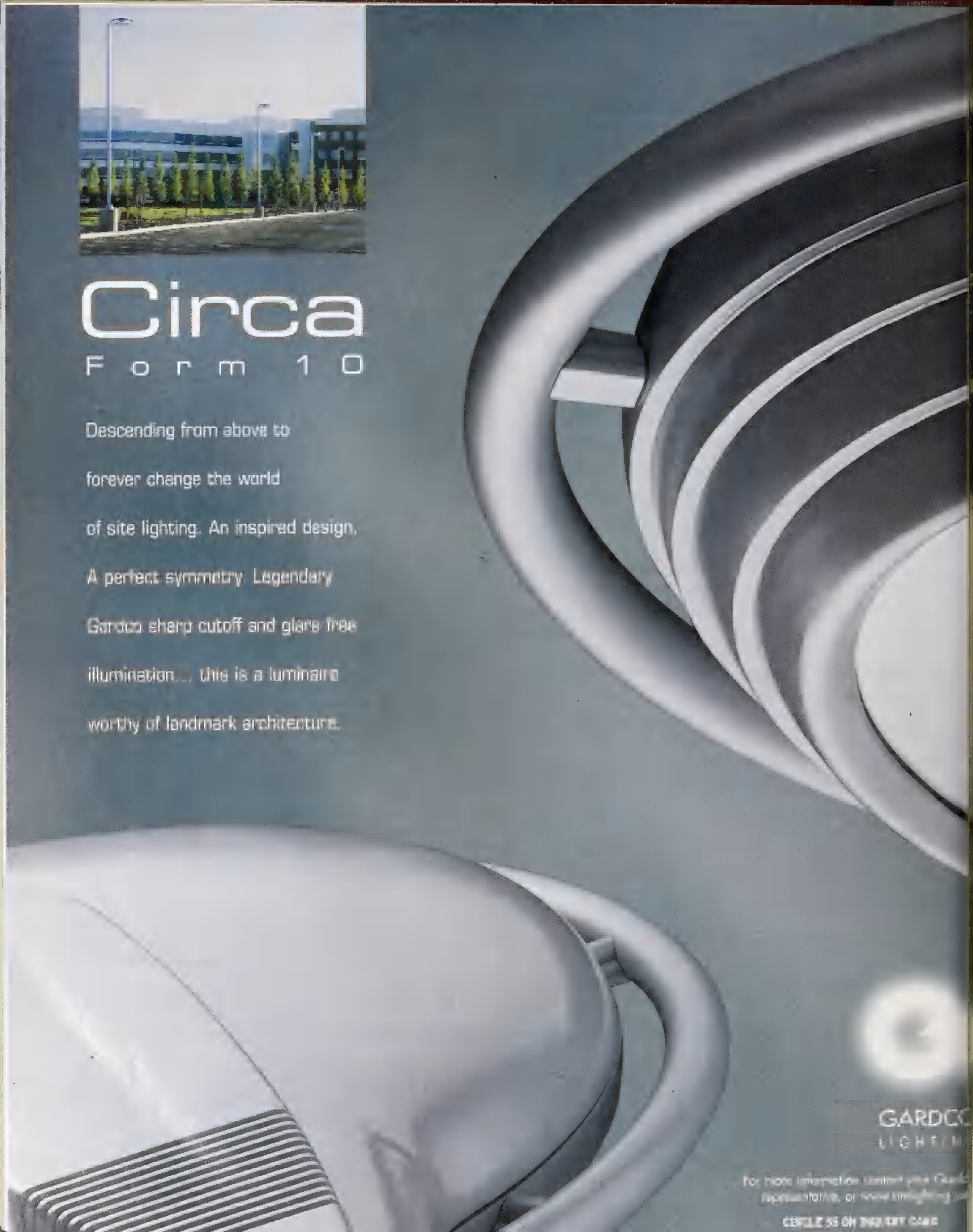

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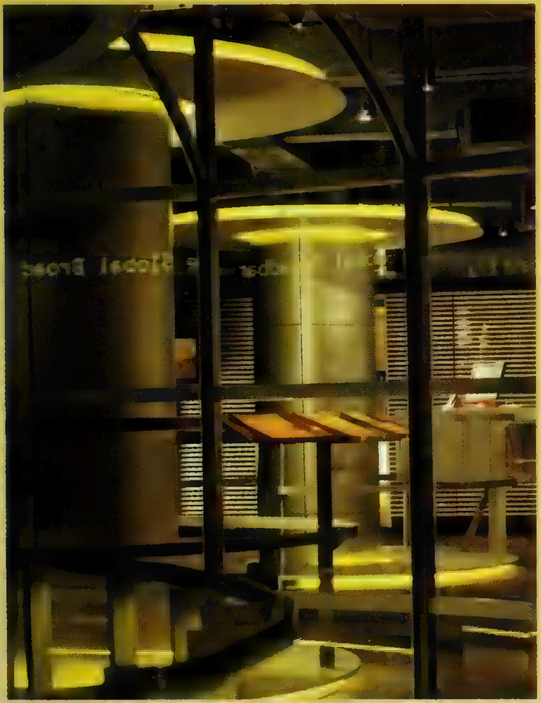
CIRCLE 55 ON INQUIRY CARD

LIGHTING

Will the last person out please recharge the electronic defibrillator implant?



The Winstar e.center, designed by Graham Hanson with lighting by Syska & Hennessey Lighting Design Group.

PHOTOGRAPHY: © SCOTT MCDONALD

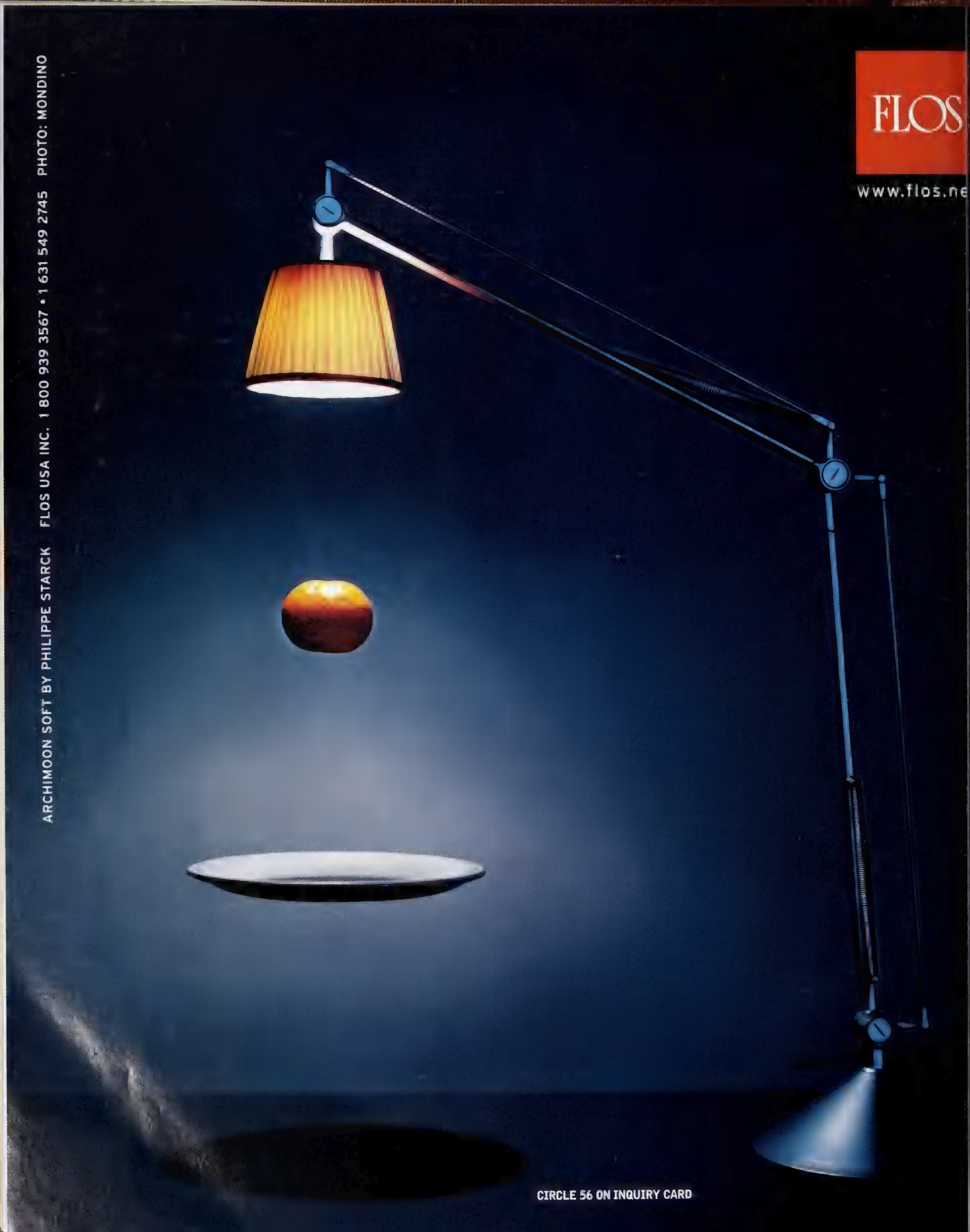
It is disturbing when people don't make the connection between the availability of uninterrupted supplies of electric power and the stable continuation of life as we know it. Take Vice President Dick Cheney, for example. As everyone must know by now, he was recently fitted with an electronic defibrillator implant, a device that senses when there are irregularities in his heart rhythms and sends out electrical impulses to correct them. If ever there was someone whose consciousness should have been raised about the need for reliable power, it should be Cheney.

Then there's the situation about the electric bill for Cheney's house. The White House is asking Congress to move the electric bill from the executive budget over to the Navy's. As far as I'm concerned, this doesn't matter very much. The house is owned by the navy, after all, and federal spending often is a shell game anyway. No matter which budget the electric bill is paid out of, it's still the taxpayers' money, and it should be used wisely.

Last spring Cheney said, "Conservation may be a sign of personal virtue, but it is not a sufficient basis for a sound energy policy." True enough. No policy based on a single idea can solve all of the nation's energy woes. It has been predicted that the vice president's electric bill will be $186,000 for 2001. This is double what was paid in 1999. This kind of increase makes no sense, unless Cheney and the house's former resident, the environmentally conscious Al Gore, have been whopped with some pretty heavy peak-demand charges. I haven't actually been invited to the house, but I have a strong feeling that a good lighting consultant could do plenty to improve the energy efficiency of the lighting there. That would decrease both the air-conditioning load and the peak-demand charges.

Rolling blackouts occur when people need more power than is available at one time. Energy efficiency can make a dramatic difference under these conditions—and I would suggest that the Vice President could even look to projects on the following pages (such as the Winstar e.center pictured at left) to see sound policy in action. *Charles Linn, AIA*

149 Creative uses
151 Lighting technology
Compact fluorescents
152 Winstar e-center
Syska & Hennessy Lighting Design Group
158 Birch Telecom and River City Studio
Derek Porter Studio
165 Lighting resources
Trade show roundup



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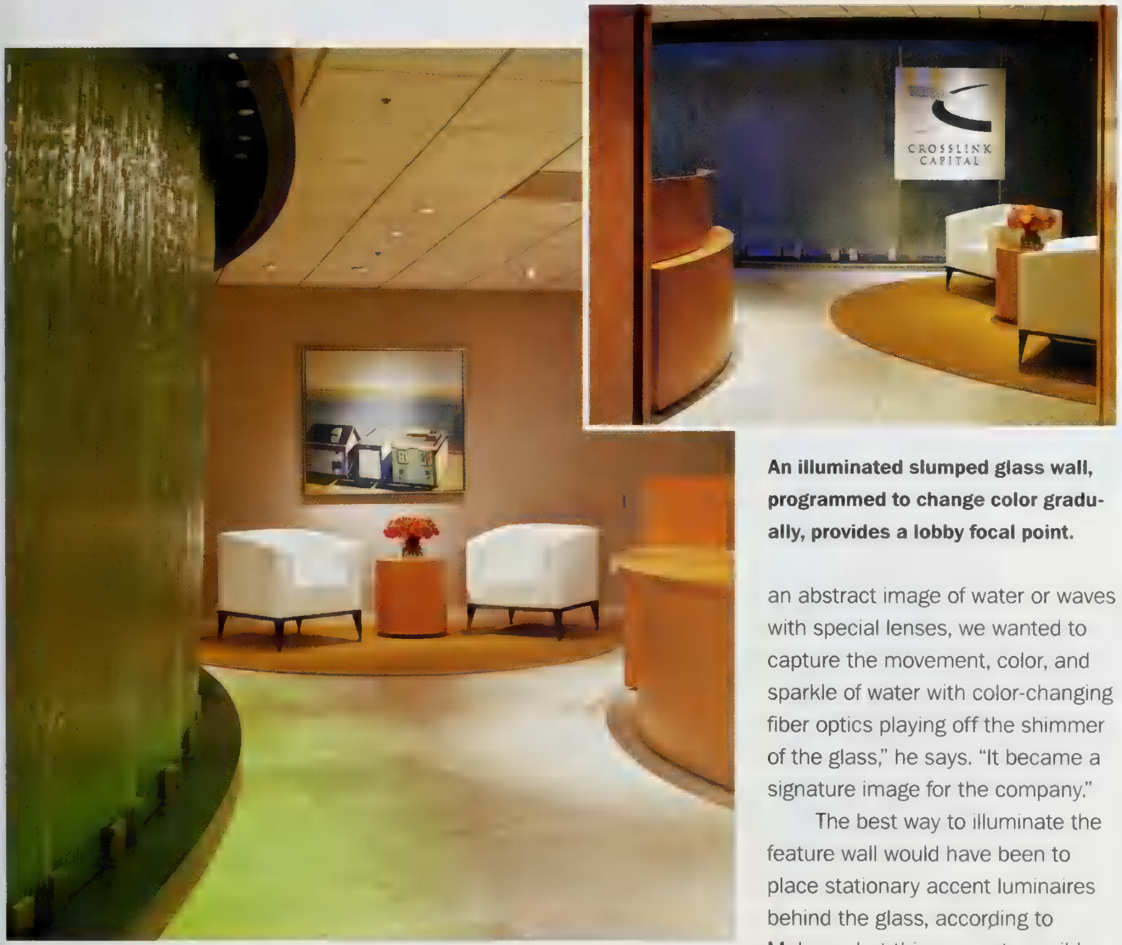
CIRCLE 56 ON INQUIRY CARD

Creative Uses

A California office creates a colorful water wall with fiber optics set against glass panels • An artist sheds light on the relationship between instruments and industrial objects



An illuminated slumped glass wall, programmed to change color gradually, provides a lobby focal point.

Fiber optics animate a curved glass wall to enhance the lobby of a San Francisco firm

The prominent curved glass wall in the offices of Crosslink Capital started out on the drawing board as an 8-foot-tall waterfall. Because there was no access to windows or views within the reception area of its facility, the San Francisco–based firm, which links capital to technology, wanted to make a dramatic statement with the water feature.

The initial concept was to create a full-height waterfall cascading behind the company logo. When building regulations prevented such a bold intervention, interior designer Joel Hendler of Hendler Design and David Malman of Architectural Lighting Design collaborated on the design of the colorful curved glass wall that would serve as a metaphor for free-flowing water.

The 20-foot-long glass wall is fabricated of large sheets of slump, or free-molded glass, with gradations that evoke a rain pattern. The trapezoidally shaped sheets, each measuring approximately 3½ feet by 8 feet, were arranged in an arc and angled by 7 degrees. The glass sheets are held in place by standard extruded-aluminum brackets, which were developed for handrails.

"The design concept changed as we started to work with the materials and configuration," says Malman. Opining that there was "nothing worse than trying to simulate water," the designers decided instead to evoke the essence of water. "Rather than trying to project an abstract image of water or waves with special lenses, we wanted to capture the movement, color, and sparkle of water with color-changing fiber optics playing off the shimmer of the glass," he says. "It became a signature image for the company."

The best way to illuminate the feature wall would have been to place stationary accent luminaires behind the glass, according to Malman, but this was not possible because the office perimeter wall was just a foot behind the feature wall, making any fixtures placed behind it inaccessible. "Fiber optics offered the best solution for animating the wall with moving color," he says.

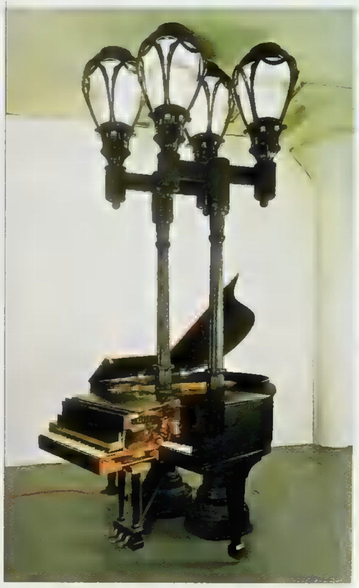
The fiber strands are arranged in three rows of 24, with two rows set behind the glass at the top and at the bottom, and one row in front of the glass at the top. The illuminating projectors contain color wheels, so that the entire surface of the glass wall can change color simultaneously. Currently, the wall turns yellow, purple, green, and blue. Because there are separate light boxes, the color changes can be done with gradual overlays, which can also create a three-dimensional effect.
Nayana Currimbhoy

Cast-iron lampposts hit a musical note

The artist known as Arman explores the territory where the categorizations of objects collide, whether they be works of art, industrial parts, handcrafted relics, or discarded pieces of trash. Recently he has focused on the kinship of musical and architectural composition, and the iconography of both disciplines.

Part of the Sandwich Combos exhibition at New York City's Marlborough Gallery, *Maldoror* features two towering lampposts that skewer a grand piano (below). Like other works in the show, its juxtaposition of stolid civic icons and an exploded instrument of artistic expression challenges the viewer's expectations regarding surface detail, form, construction, and use.

When he could not purchase the salvaged New York lampposts he had spotted near Battery Park, the artist found a Midwest manufacturer to reproduce the cast-iron luminaires. The lampposts appear as a monolithic candelabra lighting a hybrid keyboard for a composer pursuing Deconstruction.
William Weathersby, Jr.



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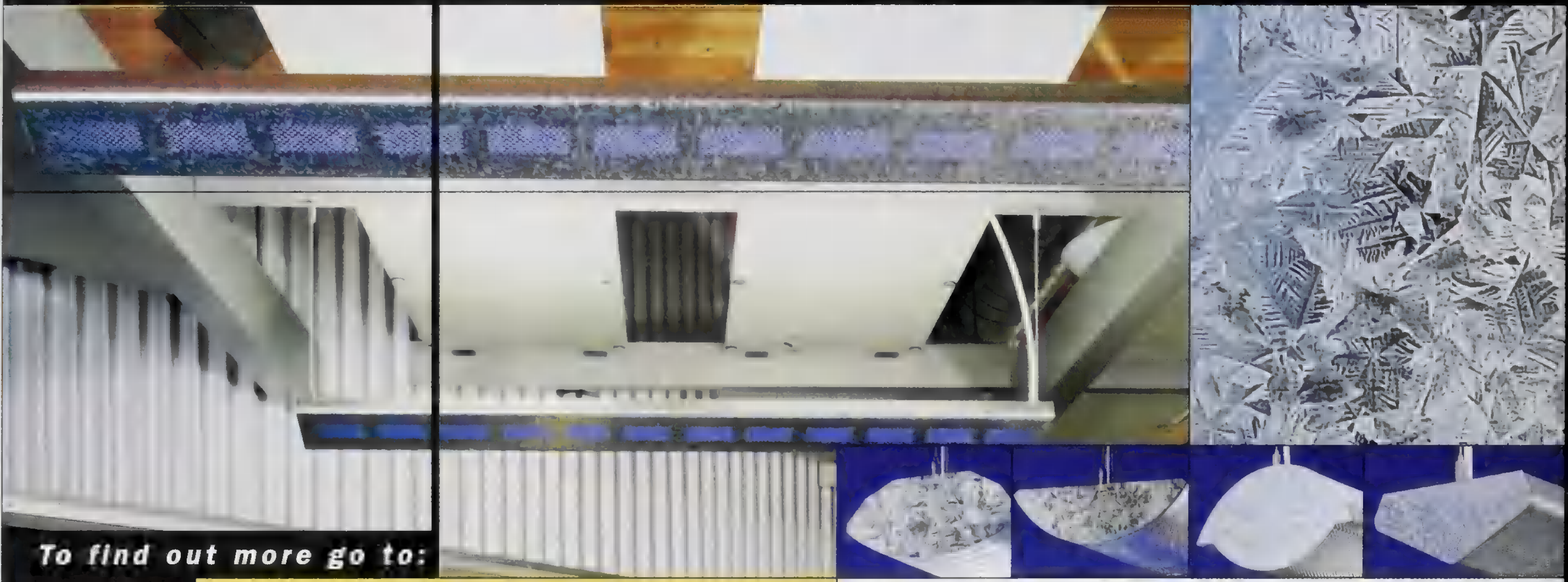

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CIRCLE 57 ON INQUIRY CARD

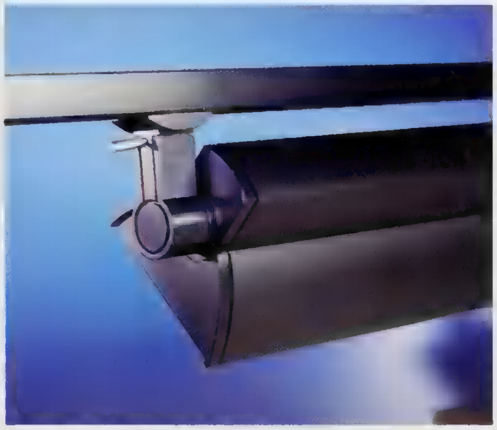
Energy-saving lighting: no more excuses

RELUCTANCE TO CONVERT TO EFFICIENT LAMPS IS BASED ON OUTDATED KNOWLEDGE. TODAY'S CFLs ARE SMALL, SILENT, AND FLICKER-FREE.

By Lindsay Audin

On both coasts, talk about keeping the lights on and the electric bills down has spurred demand for energy-efficient lighting products. Some electric-supply stores in California have seen sales of fluorescent fixtures and lamps jump by 500 to 1,000 percent over the last year. Maintaining stock became a serious problem as people prepared for a summer when the power supply may be precarious—and electricity will no doubt be expensive. But lighting surveys show that many buildings with efficient fluorescent lighting continue to use incandescents in their downlights, track, floor lamps, and decorative lighting.

Outdated knowledge is a big part of the problem. Early compact fluorescent lamps (CFLs) were expensive, bulky, buzzy, slow-starting, and sometimes short-lived, and they often emitted oddly colored light. These drawbacks have all but vanished with the latest units. Even dimmable and purely decorative CFLs are now available. Ever-shrinking electronic ballasts—now no bigger than a nickel in some self-ballasted CFLs—drive smaller, more efficient, flicker-free lamps that start instantly and last 5 to 10 times longer than their incandescent ancestors. Even with these improvements, cost of the lamps has decreased. Current prices for power in California, New York, and New England are so high that the payback period for converting from incandescent to CFL has been reduced from years to months.



A CFL fixture by Lightolier presents a practical alternative to incandescent track lighting.

Lots of new choices

The major lamp manufacturers and a variety of importers offer self-ballasted CFLs in shapes and sizes that are very close to those of standard incandescent A-lamps. Their color quality is quite acceptable for most general lighting needs. Where a tighter beam is required, screw-in adapters by ProLite, Osram Sylvania, and others can be used to install CFLs in downlights. These units have ballasts, reflectors, lenses and, in some cases, pin-based sockets. The new reflector and lens are designed to focus the output of the multiple tubes of a CFL and thus can maintain or even increase the fixture's efficiency. Often these devices can be permanently installed to avoid "snap back," which occurs when fixtures retrofitted with CFLs are later relamped with incandescents.

Even high-efficiency track lighting is becoming more common. While not designed to provide a very tight beam—MR-lamps are still best for precise control—the track heads can be easily adjusted, and some CFL units fit existing track. Where high light levels are needed, ceramic-based metal halides, which have excellent color rendering, are available.

But what about those chandeliers, shaded wall fixtures, and other decorative luminaires? MaxLite offers self-ballasted MiniCandle CFLs that fit into the same candelabra sockets as the flame-style incandescent lamps. But instead of a 20-watt lamp that lasts fewer than 1,000 hours, one can now install a 3-watt CFL that lasts 6,000 hours. They cut wattage while maintaining the output and look of traditionally styled fixtures, and carry a three-year warranty.

High-wattage incandescent alternatives

Lobbies, dorms, and many offices continue to be filled with halogen and high-wattage incandescent floor lamps, which often pull 300 to 500 watts. While no screw-in alternative exists for direct bulb replacement, there are now fixtures with very similar features that use either high-wattage CFLs or miniature metal-halide lamps. A fixture equipped with a 54-watt flat profile CFL provides approximately the same illumination as a 300-watt halogen, while a 68-watt ceramic metal-halide unit provides essentially the same output as a 500-watt halogen or incandescent. Neither will roast your room or ignite your furnishings. While CFLs are instant-on, ceramic metal-halide lamps presently have a startup delay but are ideal in places where lights are continuously on.

Dimming CFLs is no problem. Several vendors offer CFLs that screw right into the same sockets, work with existing dimmers, and still provide much higher efficiency and longer life than the incandescents presently in use. And CFLs don't turn yellow when dimmed, as is common with incandescents. So far, no CFL can be dimmed below 10 percent, so a few applications may continue to need incandescents when output must be reduced further.

A moral imperative

Incandescents continue to make up a large portion of the lamps we buy. They cost little, they weigh next to nothing, and they are available at nearly every supermarket and convenience store in America. There is still a place for them in certain applications. But their inefficiency and heat output add to the conditions that cause blackouts. Continuing to use incandescent bulbs needlessly is a personal choice whose consequences may harm others. The problems wrought by inefficient energy use, whether they be economic or climatic, make it time to move the standard incandescent bulb into the museum case, right next to the kerosene lantern and whale-oil lamp. There are no longer any excuses not to. ■

Lindsay Audin is the president of Energywiz, Inc., an energy and technology consulting firm (www.energywiz.com).

Winstar's corporate training center educates clients and staff within a walk-through environment. An entrance tunnel (facing page) features neon along the floor to enhance the pathway.

A corporate center's architectural forms and displays shimmer in the light of yellow neon and accents

By William Weathersby, Jr.

As communications technologies evolve at a broadband and digitally driven pace, the need to communicate rapid changes to both staff and clients expands. The multimedia design firm Graham Hanson Design—which collaborated on the astronomy displays at Polshek Partnership's stargazing Rose Center—has unveiled a 4,000-square-foot technology presentation and demonstration environment for the New York headquarters of Winstar, a broadband services company that sought to strengthen its in-house training capabilities. Integrated lighting, vibrant display monitors, and a blaze of multimedia signage and graphics are orchestrated to support the corporate image and brand while aiding the education of personnel and service users. The lighting designer for the Winstar e.center was Syska & Hennessy Lighting Design Group. Mancini-Duffy was the architect of record.

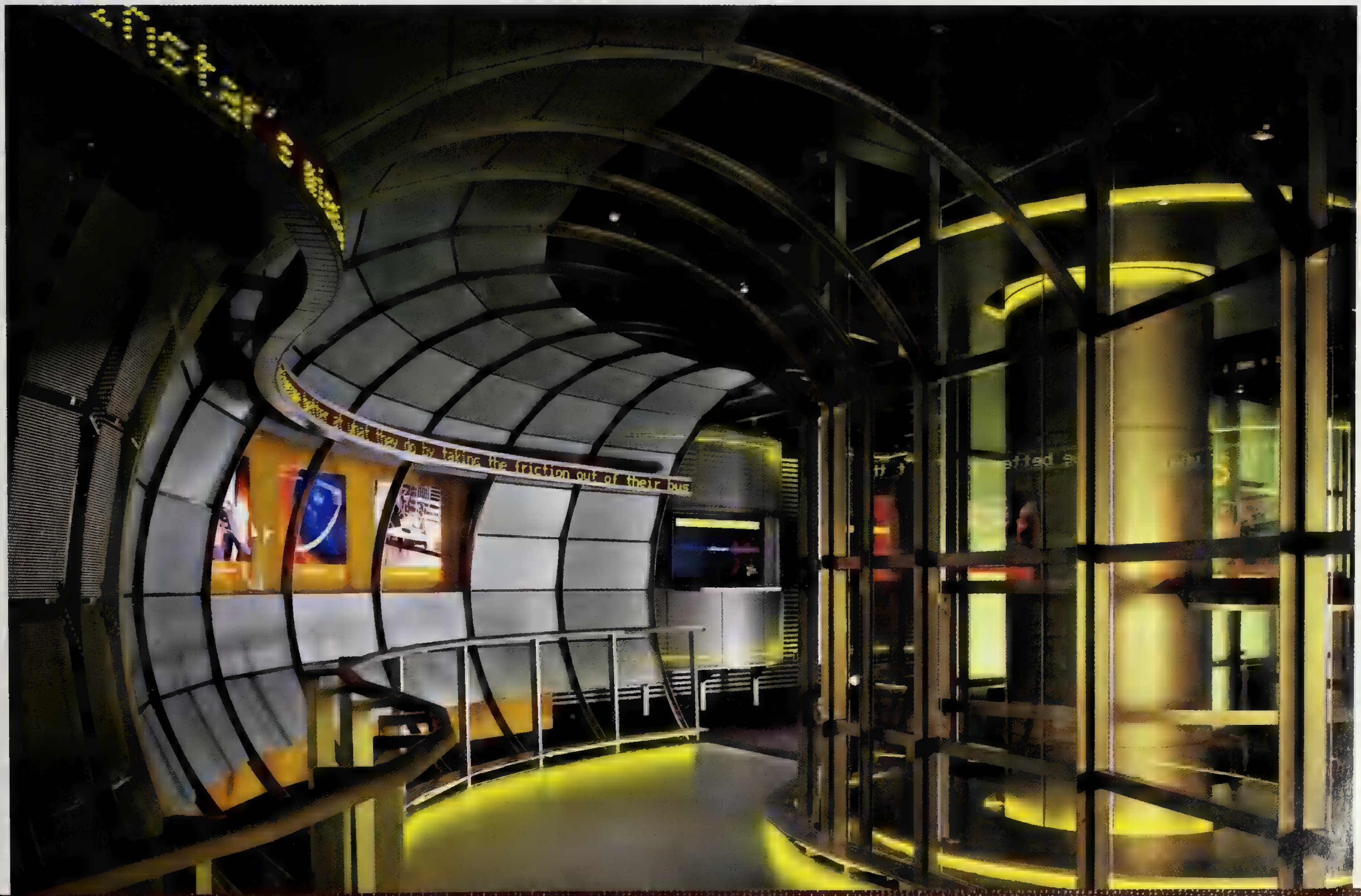
"The primary objective was to design an environment that could accommodate multiple programs tailored to Winstar's intersecting target audiences—customers, strategic partners, members of the financial and real-estate communities, the media, and employees," says design principal Graham Hanson. "The client wanted an interactive and flexible environment that would make training sessions an engaging experience.

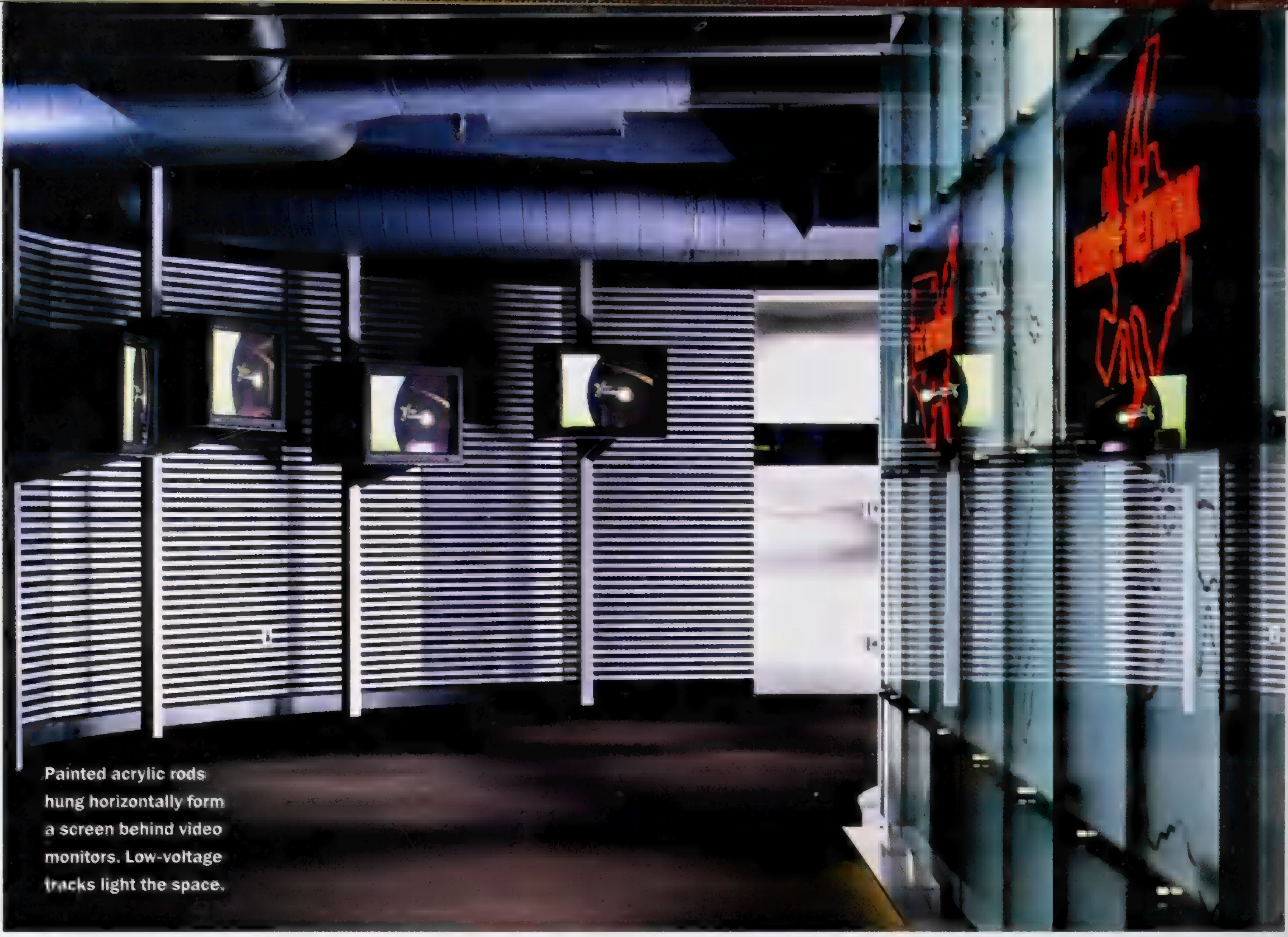
"Winstar provides services rather than manufacturing a tangible, easily displayed product," Hanson continues. "It's sometimes difficult for new users to wrap their minds around technical concepts such as Internet connections, high-speed data transmission, and Web-hosting operations. The e.center speeds the learning curve."

Lighting plays a lead role in unifying the look of the varied displays while also providing circulation cues in the walk-through

RECORD contributing editor William Weathersby, Jr. is a writer based in Westport, Conn. He frequently writes about lighting and architecture.

Project: *Winstar e.center, New York City*
Principal designer: *Graham Hanson Design—Graham Hanson, principal; Yuji Yamakazi, Chris Dimaggio*
Project management: *Kendra Carlson*
Architect of record: *Mancini-Duffy*
Lighting designer: *Syska & Hennessy Lighting Design Group*
Fabrication and audiovisual integration: *Rathe Productions*





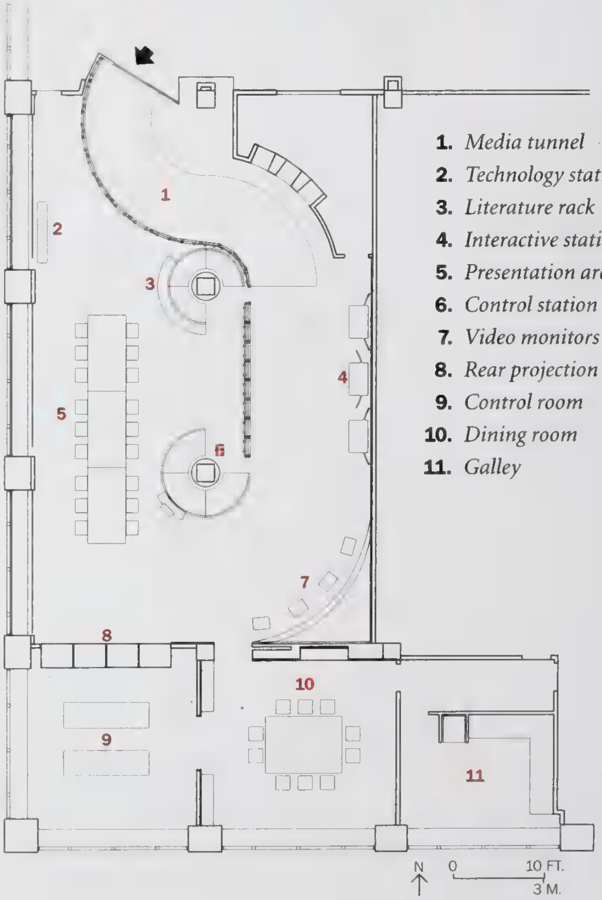
Painted acrylic rods hung horizontally form a screen behind video monitors. Low-voltage tracks light the space.

presentation. (Winstar wanted to avoid the typical trapped-in-a-training-room instructional mode, so participants progress to a series of media stations, much like one would in a museum or entertainment attraction.) Architectural forms and video monitors shimmer in the light of yellow neon and low-voltage accent and spotlights.

Though Winstar's corporate offices take up more than four floors of the Third Avenue tower, it wanted the training center to have a distinctly different look. "The training center works as a three-dimensional extension of the brand image," says principal lighting designer Bill Kuchler. More than 50 feet of 12-mm neon was specified in a custom yellow hue to match Winstar's corporate signature. Interior finishes were limited to a palette of black and silver, allowing the lighting and the media to create a sense of drama.

THE TRAINING CENTER CONVEYS DATA WHILE AVOIDING A STATIC LECTURE MODE. LIGHTING ENGAGES PARTICIPANTS.

Visitors enter the Winstar training center through a curved tunnel whose exposed structure is fitted with powder-coated perforated-metal panels and backlit image boxes. Two LED matrix panels can flash trailing messages customized for each training session's participants. The silver vinyl tile serves as a foil for the run of yellow neon at floor level. Other ribbons of neon crown the columns and display stations, the central architectural forms. Low-voltage track fixtures accent walls and cast pools of light along the pathway. The fixtures are fitted with louvers to achieve a narrow distribution of light.



1. *Media tunnel*
2. *Technology station*
3. *Literature rack*
4. *Interactive stations*
5. *Presentation area*
6. *Control station*
7. *Video monitors*
8. *Rear projection*
9. *Control room*
10. *Dining room*
11. *Galley*

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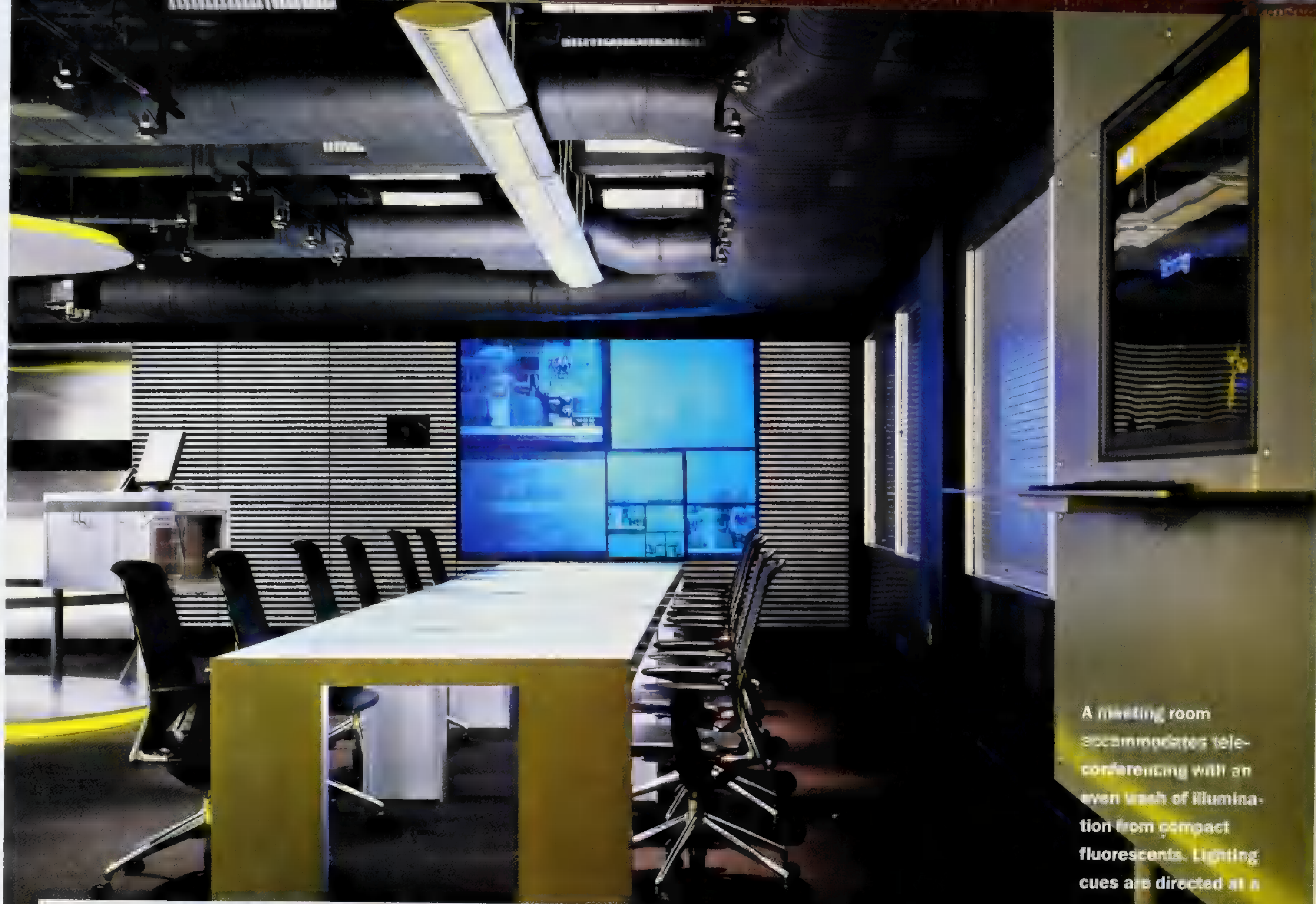

A meeting room accommodates tele-conferencing with an even wash of illumination from compact fluorescents. Lighting cues are directed at a control panel (inset).

"The video monitors and the curving metal walls and columns give a strong visual look to the space, so we didn't want the lighting to compete for attention," Kuchler says. "The spots and neon provide ambient and directional light but were not intended as a light show."

Deeper within the training facility, wall dividers were created with horizontal runs of ¼-inch-diameter acrylic rods set in front of black fabric acoustic panels. Plasma screens and rear-projection displays take center stage. Lighting levels are programmed by an on-site operator to change along the pathway, visually directing participants to the next station. Cove-mounted indirect fixtures provide additional ambient illumination. The placement of ceiling-mounted fixtures required careful planning to work around the ceiling plane's exposed ductwork and mechanical systems.

Outfitting the conference room, which is often used for teleconference presentations, compact fluorescent luminaires evenly illuminate participants without creating glare. A suspended direct fluorescent luminaire lights the tabletop. ■

Sources

Low-voltage tracks: *Lightolier*

Suspended fluorescents: *Zumtobel*

Compact fluorescents: *Winona*

Cove-mounted indirect fixtures: *Linear Lighting*

Recessed low-voltage fixtures: *Lightolier*

Neon: *Technolux, Rathe Productions*

Lighting controls: *Lutron*

WWW For more information on the people and products involved in this project, go to Lighting at **www.architecturalrecord.com**

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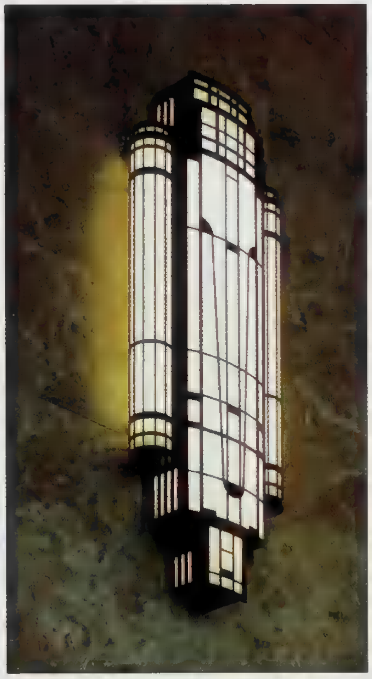

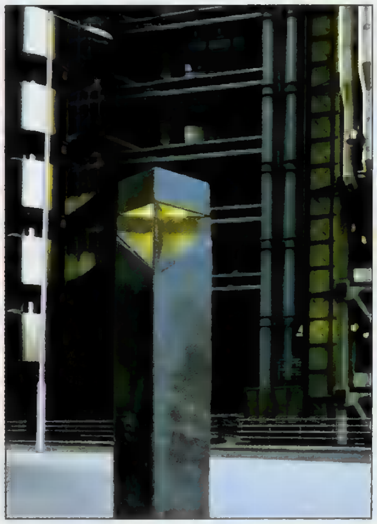

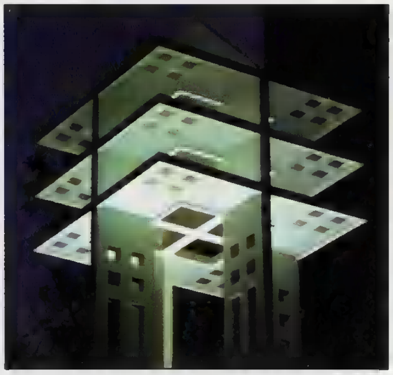

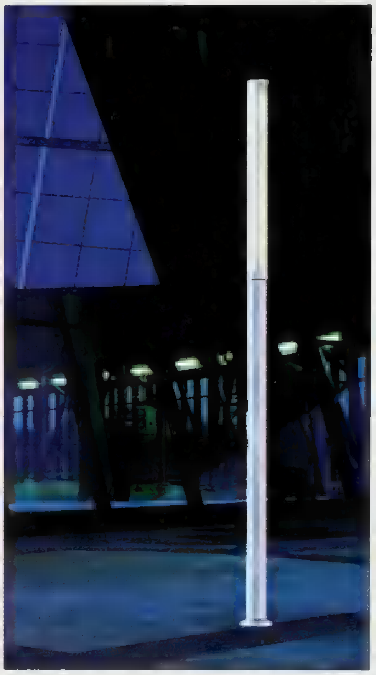

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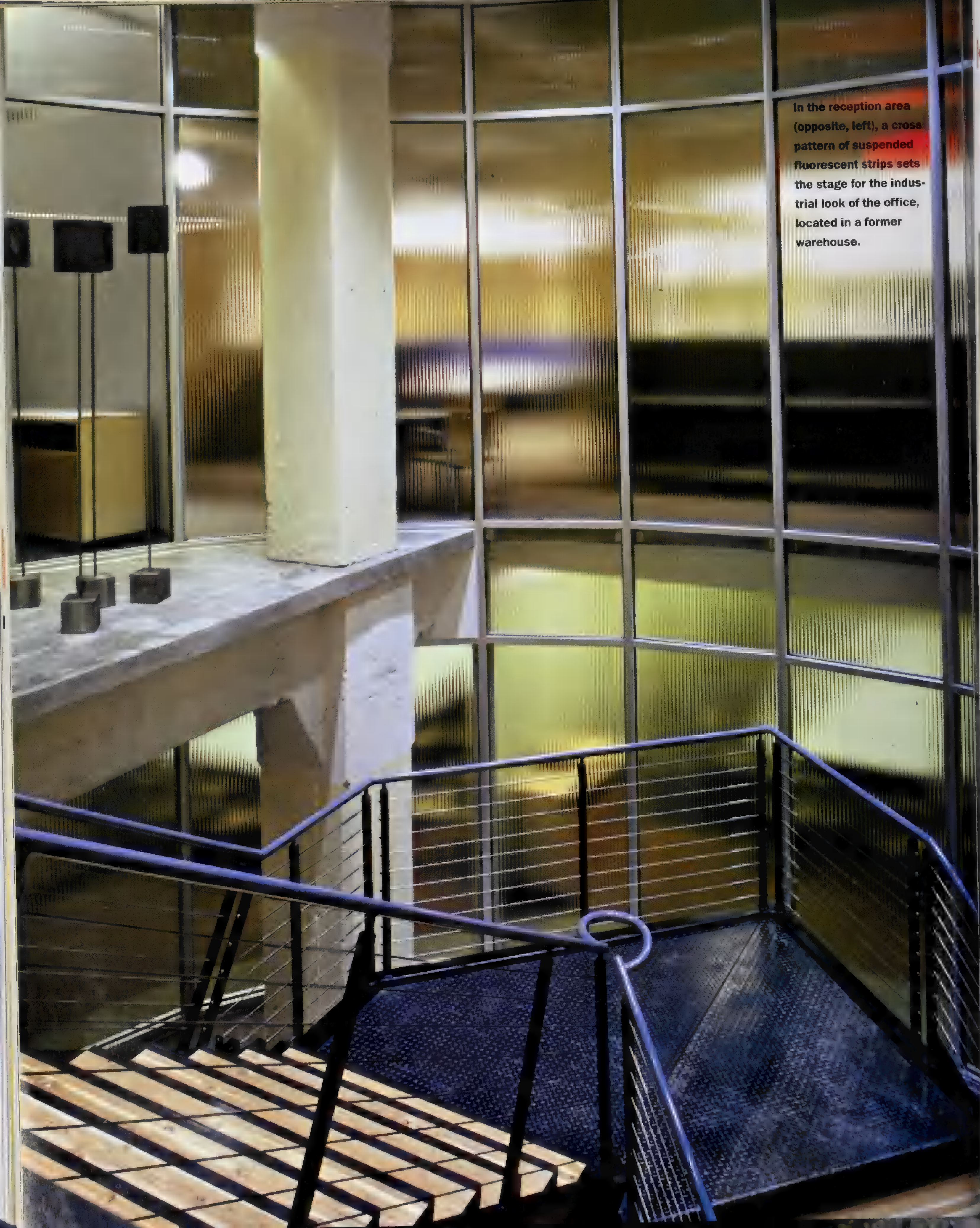
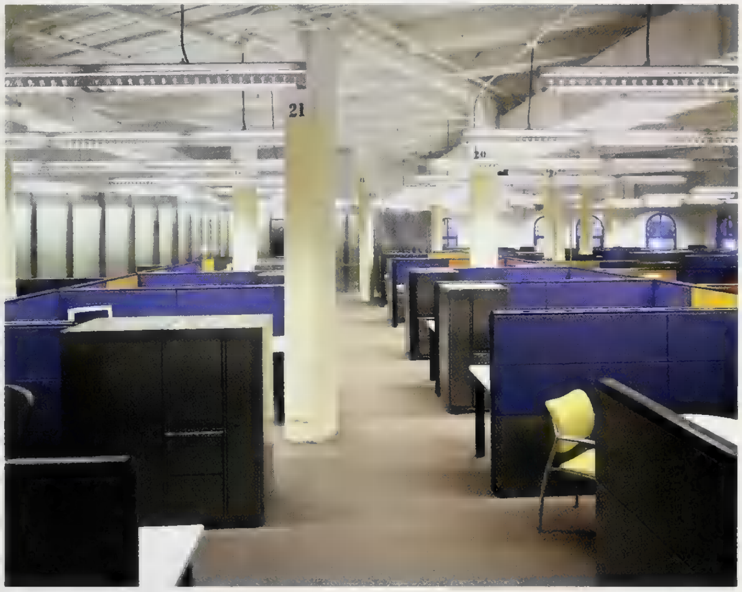


In the reception area (opposite, left), a cross pattern of suspended fluorescent strips sets the stage for the industrial look of the office, located in a former warehouse.

Kansas City designer Derek Porter illuminates two new offices with an array of lighting looks



PHOTOGRAPHY: © MICHAEL SPILLER

by Nayana Currimbhoy

At Birch Telecom, off-the-shelf fluorescents make for an energy-efficient office

When Derek Porter founded his lighting design firm six years ago, he rented space in the Crossroads Arts District in Kansas City, Mo., a neighborhood where artists and designers were converting abandoned buildings into offices, studios, and galleries. Near the city's Union Station, which was recently restored and adapted as a science center, the area's warehouses now enjoy second lives as offices and condominiums, enhanced by an outcropping of restaurants, hotels, and nightclubs. An active participant in the reshaping of the neighborhood, Porter has built a thriving practice that has been closely linked to the rebirth of this urban core.

Another company that elected to locate its main offices in a Crossroads warehouse is Birch Telecom, a fairly new telephone carrier. The company has created an aggressive image for itself—in one advertisement it depicts itself as a dog, and a major competitor as a fire hydrant. As an upstart, Birch Telecom wanted to create a corporate space that would retain the industrial roots of the concrete warehouse, while burnishing a renegade reputation as a member of the "pioneering" district. A conservative budget and energy efficiency were also major concerns.

Designed by Wiedeman Architects with lighting by Derek Porter Studio, the office features low-cost, off-the-shelf lighting equipment. In the reception area, a cross pattern of suspended fluorescent strips creates what Porter calls an "offbeat chandelier" for the entrance. Besides setting the stage for the industrial sensibility of the space, the chandelier is also a subtle reference to the Crossroads community. Metal-halide lamps recessed into the ceiling above the stairwell create a glowing column of light rising up through the space.

The 60,000-square-foot office features an undulating, translucent partition wall, which separates the circulation from the office space. Forty-watt biax fluorescent wall washers, mounted on the office side of a corrugated plastic wall, create patterns of light as visitors or workers pass through the corridor. Within the hallway, illumination has been kept at low levels, without downlights, so that the backlit feature wall becomes a sculptural element as one progresses through the space.

In the open office area, single-lamp T8 fixtures have been mounted above the furniture only where task light is needed, dramatically reducing the overall cost of fitting out the space. The direct 34-watt fluorescent strips provide uniform task lighting of 45 footcandles, falling off to 20 footcandles in the aisles, so that no additional task lighting is required. This feature helps to bring the average energy consumption of the office to an admirable .5 watts per square foot.

Nayana Currimbhoy is a New York–based writer and editor who specializes in architecture and lighting. She is a regular contributor to RECORD LIGHTING.

Project: *Birch Telecom, Kansas City*
Architect: *Wiedeman Architects*
Lighting designer: *Derek Porter Studio—Derek Porter, Katrina All*
Electrical engineer: *Gibbens Drake Scott Engineering*
Electrical contractor: *Mark One Electric*
General contractor: *J.E. Dunn Construction*

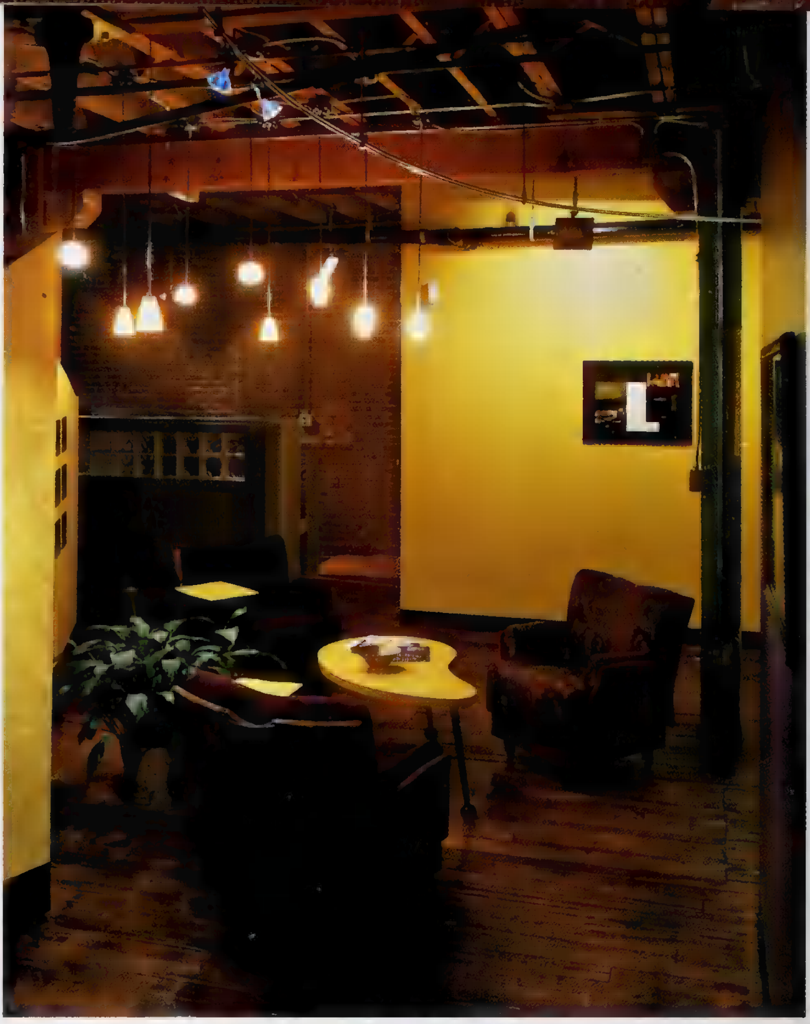
Sources
Lobby fluorescents: *Williams*
Lobby downlights: *Infinity*
Pendant-mounted and uplight fluorescents: *Zumtobel*
Compact fluorescent wall washers: *Lightolier, Windirect*
Conference room downlights: *Shaper*
Fluorescent lamps: *Osram Sylvania*

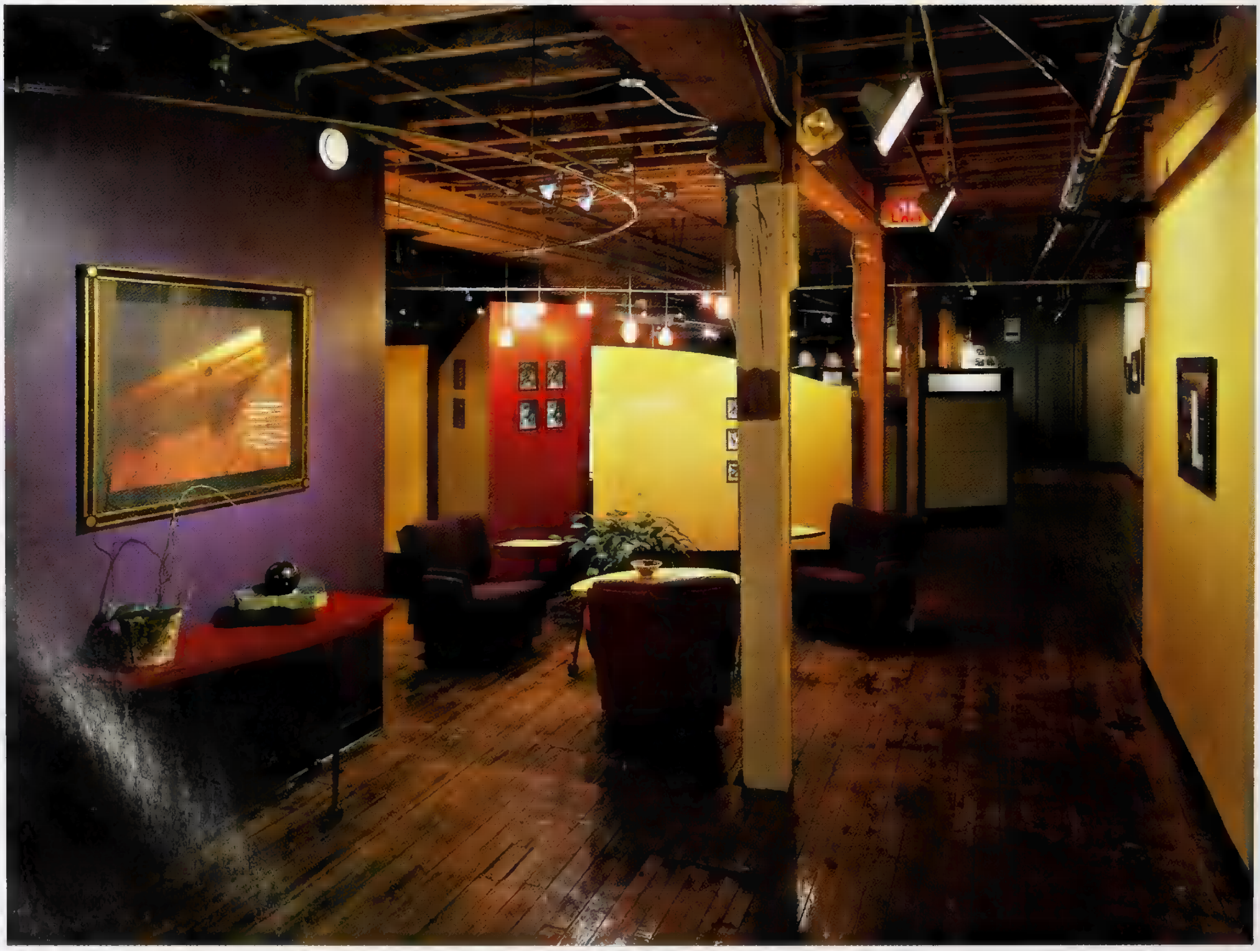
A low-voltage rail system snakes through the open loft office of River City Studio

River City Studio is the kind of place where employees bring their pets to work. A graphic- and Web-design firm with a roster of young and energetic employees, the company fosters creativity by providing a flexible and unconventional workplace environment. The office, a 3,500-square-foot loft space that was originally a box factory, is located in an 1880 building in downtown Kansas City. The clients have retained the original wooden floors, ceilings, and columns. The management's idea of a renovation was to allow the staff to individually order their own furniture to outfit their personal cubicles.

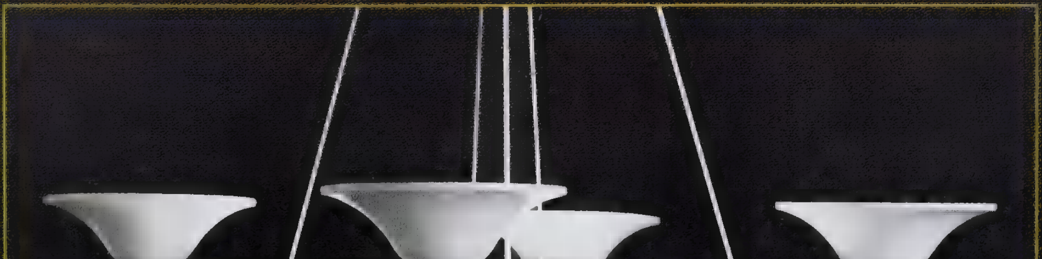
"The place was looking better, but I kept staring at the same old fluorescents and thinking, we should be able to do better than this," says company principal Deb Turpin, who moved to River City in 1985, when the now-fashionable River Market area was a cluster of mostly abandoned buildings. She came across lighting designer Derek Porter when she judged a Kansas City Chamber of Commerce small-business competition in which he was an entrant. "He was very thoughtful; he understood that for a small business like ours, the budget is very limited," says Turpin. "His design has made a huge difference to our office."

"I was told that the design had to be flexible, playful, and warm," says Porter. "But integrating the lighting with the exposed ceiling was a challenge." His unconventional solution was to create a monorail that wraps around the space in an organic curve. All fixtures are suspended from the monorail. Each cubicle has been assigned two 50-watt MR16 fixtures, which can be placed and





In the reception area (above and left), the neutral-colored walls are brightened by light from halogen floods, while a playful cluster of glass pendants emphasizes the 14-foot ceiling plane.



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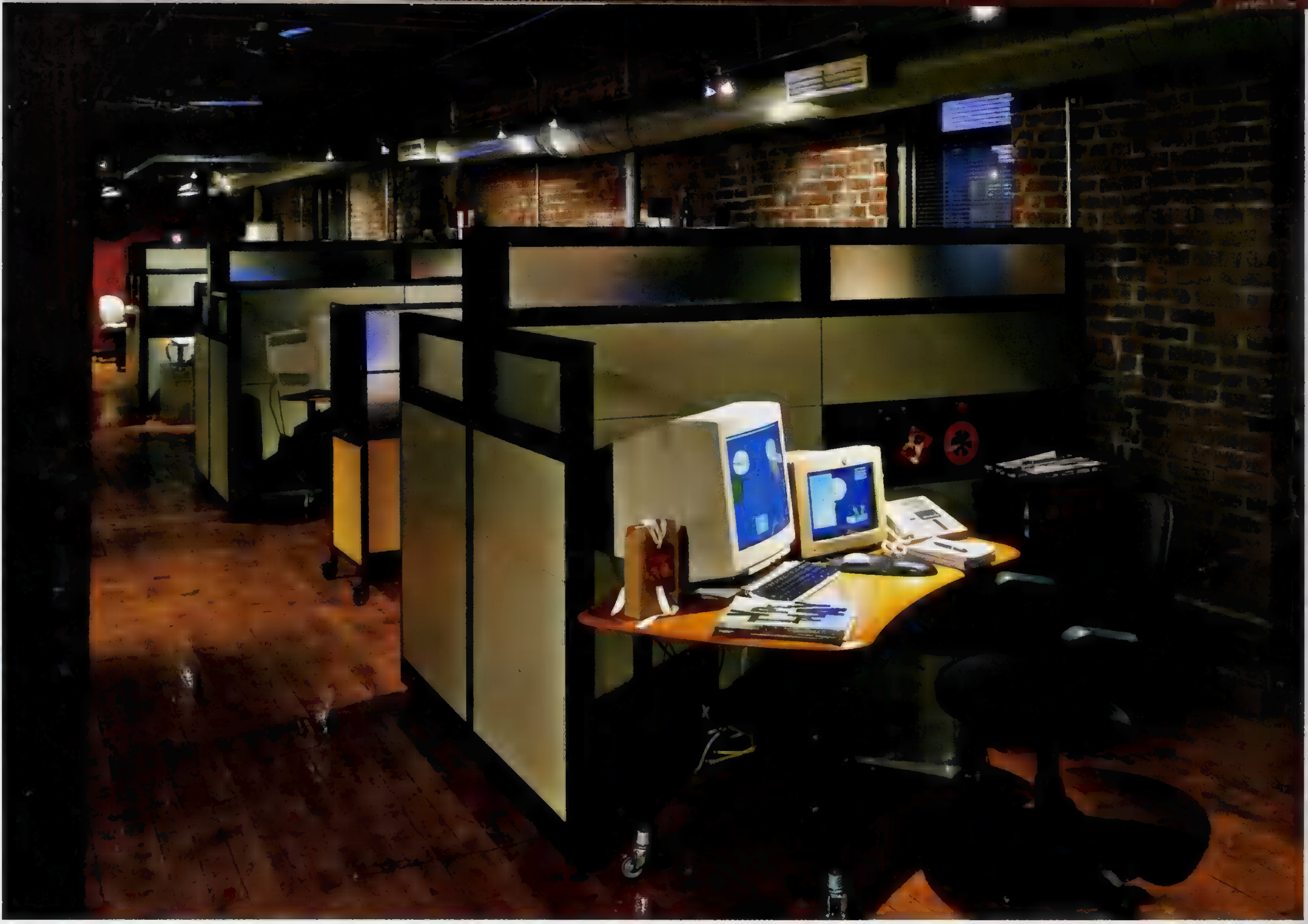

Two MR16 halogen fixtures were assigned above each cubicle (above and left). They can be adjusted according to each worker's tastes, to provide task lighting while avoiding glare on computer screens.

focused according to the individualized floor plan. "From the textbook point of view, this was probably the worst solution. But for this client, it worked," says Porter. The meandering chrome rail serves as a counterpoint to the building's turn-of-the-century timber construction, while the halogen lamps provide warm pockets of light and give the space a residential ambiance.

In the reception area, halogen flood fixtures are set as wall washers, while a playful cluster of pendant-mounted fixtures—selected by the members of the River City Studio staff—creates a dramatic entryway that emphasizes the 14-foot ceiling plane. "People come in and say, 'What a beautiful space.' The lighting gets a lot of credit for that," Turpin says. "It ties the space together." ■

Project: *River City Studio, Kansas City*
Lighting designer: *Derek Porter Studio—Derek Porter, principal; Andy Matlock*
Electrical contractor: *Fredrick Electric*
General contractor: *River City Studio*

Sources
Low-voltage pendants: *Eureka*
Low-voltage monorail system: *Tech Lighting*

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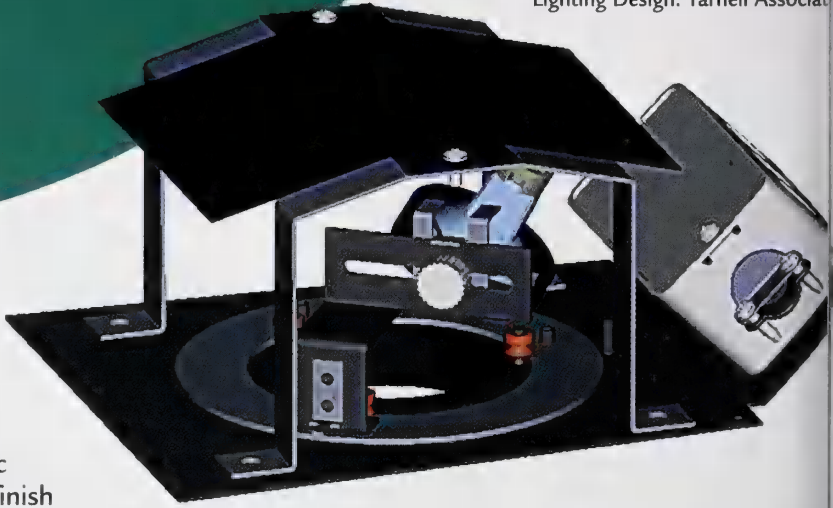

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Lighting Briefs

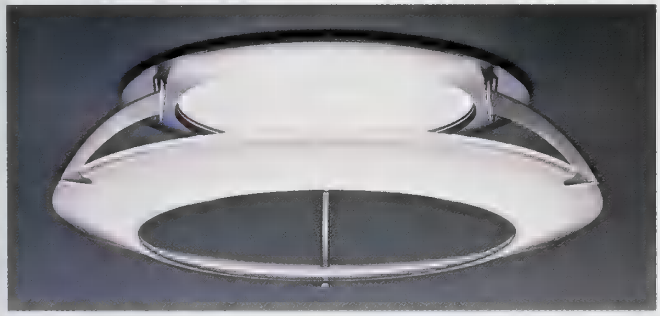
The lighting products shown here were introduced at an array of trade shows around the country this year, including LightFair International in Las Vegas, ICFF in New York, and NeoCon in Chicago. *Rita F. Catinella*

▲ Holographic technology

At this year's LightFair, Ledalite won both Best New Product of the Year and Energy Product of the Year, for MesoOptics (right), a new form of optical-control materials produced using holographic techniques; and Ergolight Discus (left), a lighting and energy-management system that features personal dimming controls, onboard occupancy and daylight sensors, and system-wide energy management. 604/888-6811. Ledalite Architectural Products, Langley, British Columbia. **CIRCLE 200**

▼ Conversation piece

Introduced at LightFair, Star•Led runs on eight white-light micro LEDs that rely solely on the energy supplied by three rechargeable NiMH or alkaline batteries. Designed by Alberto Meda and Paolo Rizzatto, the mobile lamp can be used as a centerpiece for a table in a restaurant, in lieu of a candle or flower arrangement. Star•Led is 10½ inches high, with an aluminum body and a transparent, polycarbonate head. 212/989-6265. Luceplan USA, Inc., New York City. **CIRCLE 201**

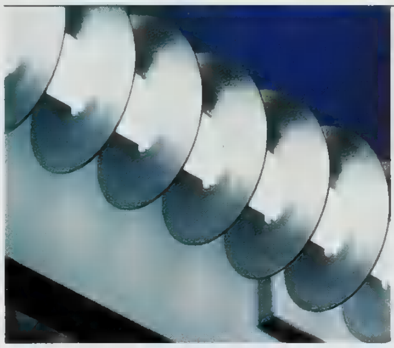


◄ Well distributed

The AH System downlight, designed by Alfred Homann, features an assortment of below-ceiling components called Light Distribution Parts (LDP) that are integral to the system's performance. The lighting effect depends primarily on the choice of either a polished or matte reflector. The AH System 360 with a matte finish and anodized glass ring is shown here. 954/349-2525. Louis Poulsen Lighting Inc., Ft. Lauderdale, Fla. **CIRCLE 202**

▼ Slice of light

Available in five colors, Stripes sconces are constructed from interlocking frames of laser-cut aluminum or anodized bronze finishes and a choice of fluorescent or incandescent lamping. Placed behind the hand-slumped sheet of water glass is a diffusing material that provides even illumination. 415/778-4300. Boyd Lighting, San Francisco. **CIRCLE 203**



◄ Overseas style

Lightolier Spectral includes European-styled wall and ceiling pendants; wall brackets; and optic, fluted, flat, adjustable, and round T5 forms utilizing a variety of compact fluorescent, metal-halide, and halogen light sources. 800/215-1068. Lightolier, Fall River, Mass. **CIRCLE 204**

◄ Off the hook

Tech Lighting introduces the Wave Turnbuckle, a new look for its Kable Lite system. The system features slim parallel cables that virtually disappear, creating the illusion of lights floating in space. The new Wave Turnbuckle anchors the system at both ends, adding a sculptural look. It is available in satin nickel and in chrome. 847/410-4400. Tech Lighting, Skokie, Ill. **CIRCLE 205**

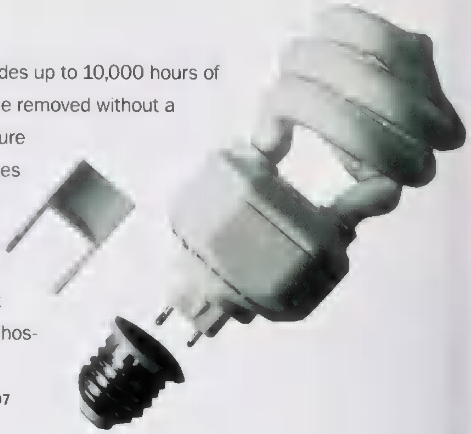
PHOTOGRAPHY: © JOHN SUTTON FOR BOYD, KASLOV STUDIO FOR LOUIS POULSEN

Lighting Briefs

► Light art

The Whitelight Collection is a series of original light sculptures created by fine artists at the behest of Targetti Sankey. In the collection, the artists used man-made light as an instrument of three-dimensional sculptural creations. These light sculptures explore the relationship between light, form, and color. The artists worked within the same limitations: all of the light sculptures were to be "absolute white" and in a 120-by-120-centimeter size. The collection is a work in progress: the first four sculptures were created by Fabrizio Corneli, Vittorio Messina ("Home Sweet Home" shown), Donatella Mei, and Franco Ionda. 714/957-6101. Targetti N.A., Santa Ana, Calif. **CIRCLE 206**

► Anti-theft device



The Spiralock Anti-Theft light provides up to 10,000 hours of energy-efficient light and cannot be removed without a special key. This added safety feature makes it a good fit in public spaces such as hotels, restaurants, hospitals, and schools. Manufactured in Germany, Spiralock contains state-of-the-art German glass and high-quality triphosphor. 973/256-3330. MaxLite SK America Inc., Totawa, N.J. **CIRCLE 207**

◄ Aalto in America

Baldinger has become the first North American distributor of Alvar Aalto's lighting designs. Baldinger debuted the products as part of its new Finlandia Collection at NeoCon. Slight modifications made to the designs enable them to comply with North American electrical codes and standards. Baldinger is importing each lamp exclusively in the materials specified in the original design. 718/204-5700. Baldinger Architectural Lighting Inc., Astoria, N.Y. **CIRCLE 208**

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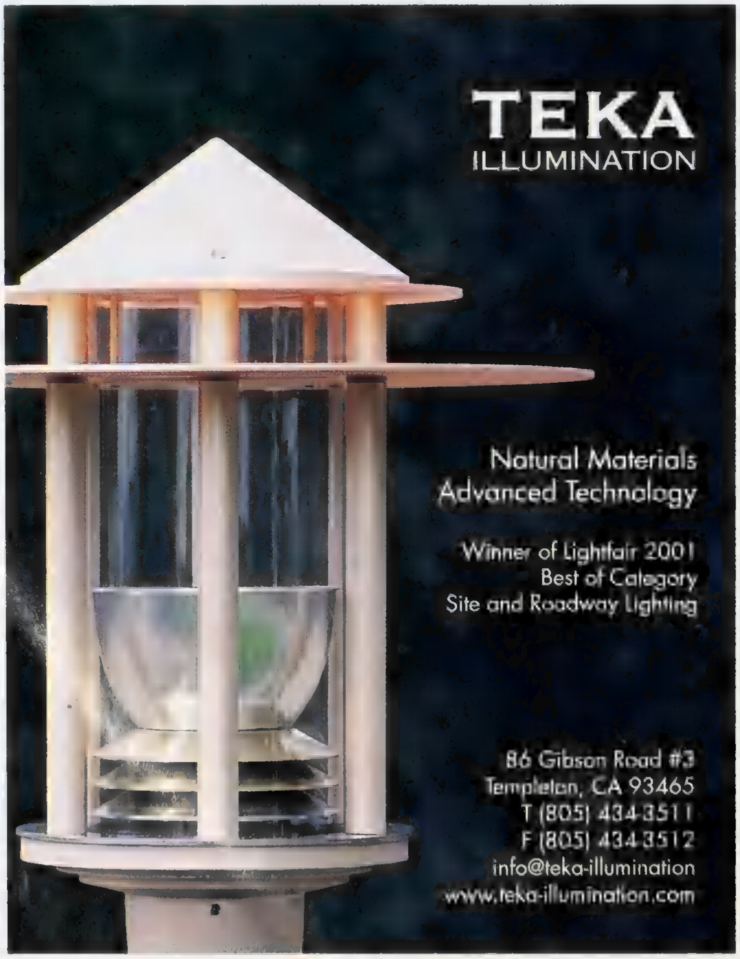

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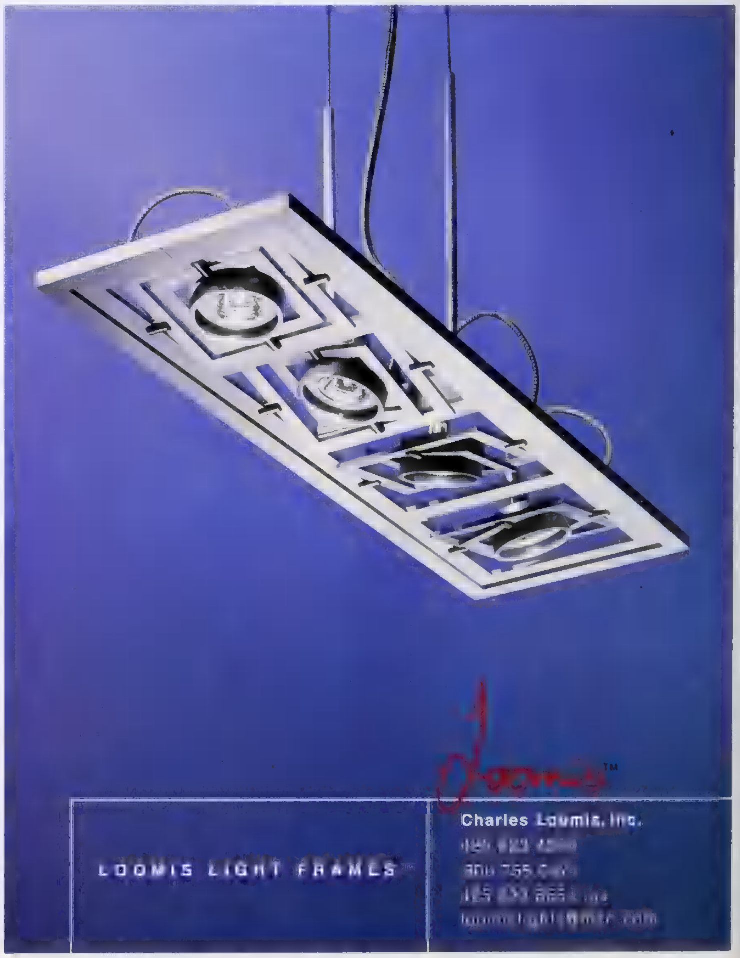

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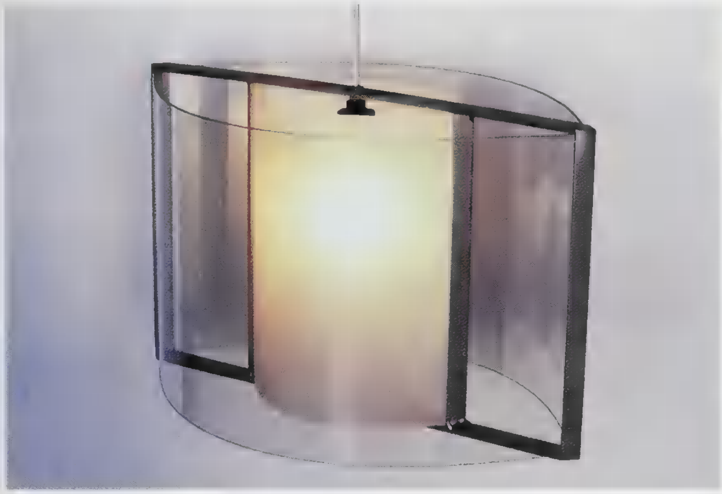
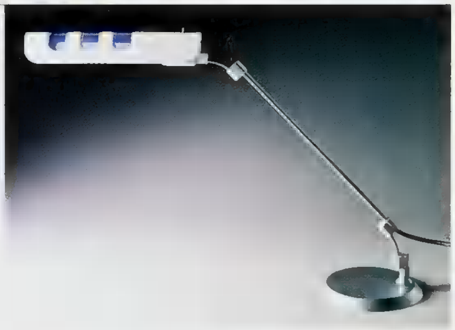
Lighting Briefs



▲ Snappy lamp
At the International Contemporary Furniture Fair (ICFF), held in May in New York City, lighting designer Christopher Poehlmann introduced the 2D/3D Lamp Series. Designed to pack and ship flat, the white and clear polycarbonate shades of the lamp simply snap into the linear metal frame to create the 2D/3D Pendant (shown). Also available is the more minimal 2D/3D Lantern Pendant, which features just a pair of white diffusers. 866/597-4800. Christopher Poehlmann Studio Inc., Naples, Fla. **CIRCLE 209**

◄ Entering the LED
Osram Sylvania's new LED systems offer advantages over conventional lamps because of their small dimensions, shock resistance, high color efficiency, long life (up to 100,000 hours), absence of IR/UV radiation, and palette of colors, including white. 978/777-1900. Osram Sylvania, Danvers, Mass. **CIRCLE 210**



► Intelligible lighting
The Mumbo task light offers a 35-watt halogen lamp with a 2,000-hour rated life. The companion light, Jumbo (right), features a 13-watt compact florescent lamp and an efficient optical design that provides 35 to 50 percent greater task illumination. Three curved openings in the top surface of the head reveal a color spectrum of diffracted light. Both are available in single- or double-arm configurations, and mountings include an edge clamp, panel bracket, and freestanding base. 800/526-5658. Jolt Lighting Inc., Schaumburg, Ill. **CIRCLE 211**

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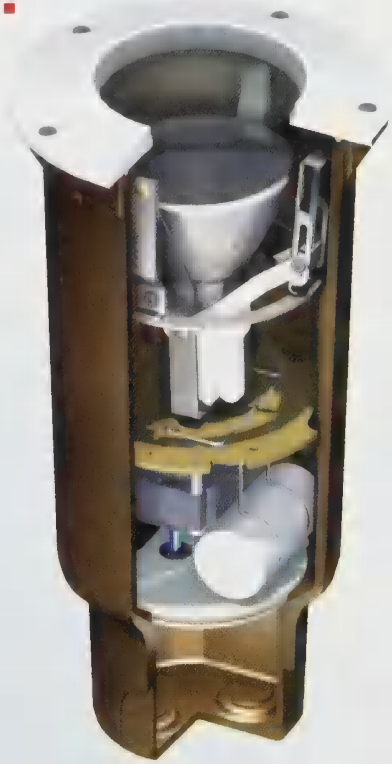

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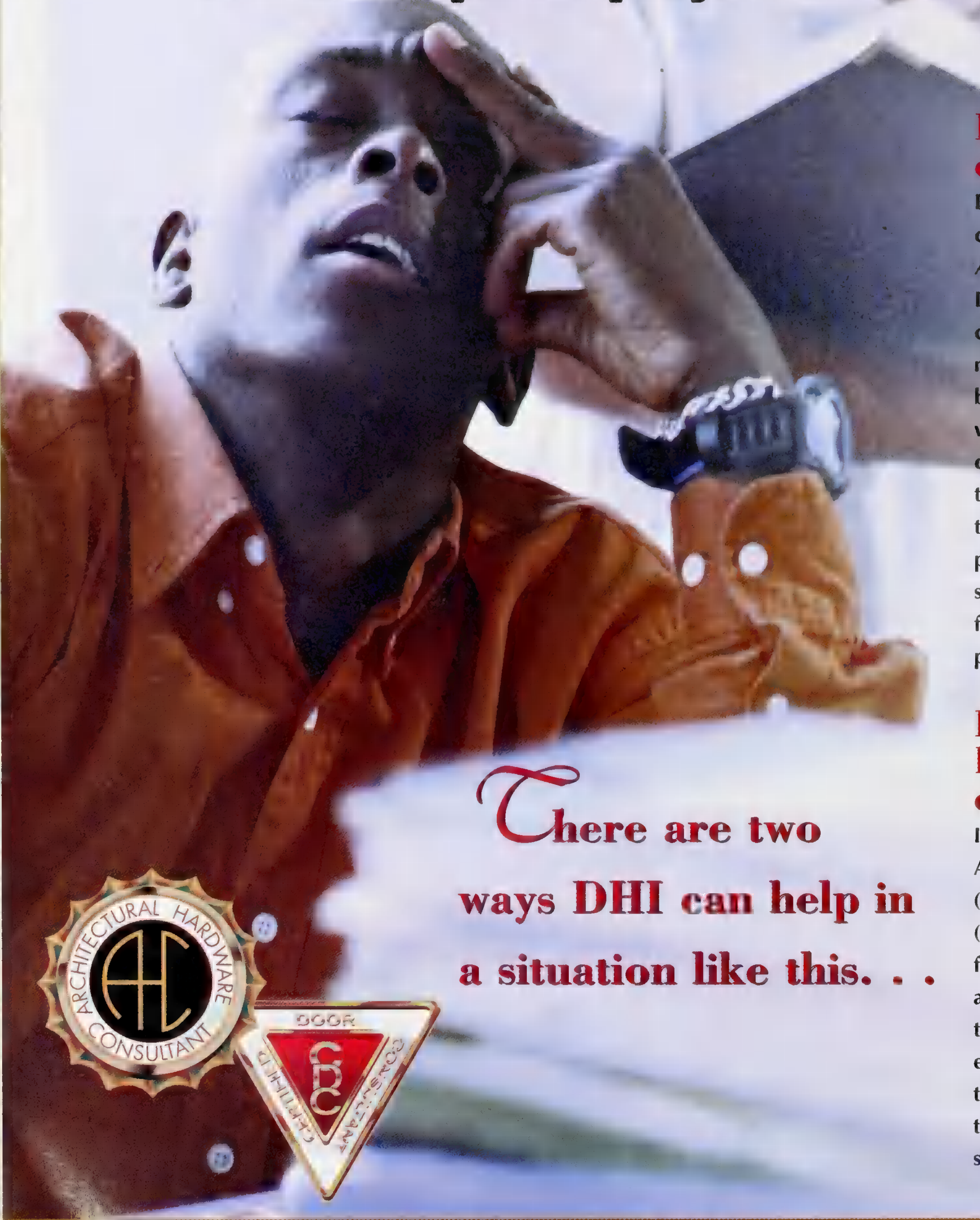

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New Products

Whether specified for a residential poolside, a public park, or the local mall, site furnishings need to withstand the stresses of weather and high traffic while playing a major role in the overall design of the project. Although seen as products of leisure, lounge chairs, planters, receptacles, and benches have serious work to do. *Rita F. Catinella*

Poolside furnishings from Kipp Stewart

Bradford Stewart Furniture has introduced a new collection of outdoor furniture designed by Kipp Stewart. The collection features aluminum frames, powder-coated in either bronze or black, and cushions that can be fabricated in any outdoor fabric. The complete collection includes a poolside wide-arc dining chair, lounge chair, dining table, dining chair, sofa, coffee table, ottoman, chaise, side table, bench, and bar stool.

The circular poolside dining table comes with a 48- or 54-inch-diameter, while the coffee table has a rectangular shape. The poolside chaise offers an adjustable back support, and the bar stool comes with or without a cushion in two heights: 29-inch bar height or 25-inch counter height. 510/835-1365. Bradford Stewart Furniture, Oakland, Calif. **CIRCLE 212**

Reintroduced seating and table collections bring sixties style back outdoors

Richard Schultz designed the original 1966 Collection 35 years ago at the request of Florence Knoll, who wanted well-designed outdoor furnishings to withstand the corrosive salt air at her home in Florida. The collection features a frame of cast and extruded aluminum, and woven vinyl-coated polyester mesh upholstery. Richard Schultz Design has reintroduced the 1966 Collection for indoor and outdoor use with a standard weatherable silver frame and a metallic silver mesh. A standard warm brown frame and mesh will be introduced this summer.

The 1966 collection with metallic silver mesh (left); reintroduced Petal tables (right).

Out of production for 25 years, the Petal Tables, which Schultz designed for Knoll in 1960, complement the company's Bertoia chairs. The table can be used both inside and out with a variety of chairs, including those in the 1966 collection. If left outdoors and untreated, the tops will weather to a silvery gray finish. The table's top is made of vertical grain mahogany, with sand-cast aluminum "top spider" hardware, and a base of cast iron.

Other offerings from Richard Schultz Design include the Cafe Collection, available in four new standard colors: spring green, daffodil yellow, sky blue, and terracotta. The collection includes the Cafe 2000, Confetti, and Topiary patterns. Designed to mimic the qualities of dappled sunlight filtering through shrubbery, Topiary's form provides strength with little weight, and it stacks easily. The chairs are available with or without arms and can be used indoors or out. The table is available with a textured aluminum top that has scalloped edges. Custom colors are available for all product lines. 215/679-2222. Richard Schultz, Palm, Pa. **CIRCLE 213**

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New Products

▲ Whatever the weather

The Westport Island chairs and settee feature Weatherend's signature slatted back detail and curved crest rail design in a more contemporary style. Available in teak or mahogany, the Westport Island collection is constructed using full mortise-and-tenon joinery bonded with a marine-grade epoxy for strength and durability. Oversized cushions can be made in the customer's own material. A variety of color finishes are also available. 800/456-6483. Weatherend Estate Furniture, Rockland, Maine. **CIRCLE 214**

► Well-heeled planter

The McKinnon and Harris Palm Box is the company's first foray into garden accessories. Originally designed for Louis XIV's collection of pomegranate, lemon, and orange trees at Versailles, Palm Boxes have been in continual use ever since. The planter is handcrafted in wrought aluminum and is fitted with a side access door for easy transplanting. Featuring hand-routed beaded panels, the high-end box weighs 100 pounds. 804/358-2385. McKinnon and Harris, Richmond, Va. **CIRCLE 215**

▼ Splashy design

Heltzer offers an array of site furnishings, including benches and planters, that combine fine metals, textiles, stone, and wood, finished to enhance their natural character. The Joe Bird Bath (below) is made of a stainless-steel frame with a silky matte finish, a natural cast-concrete base, and a hand-formed glass basin. 877/561-5612. Heltzer, Inc., Chicago. **CIRCLE 216**

► Wright ornament

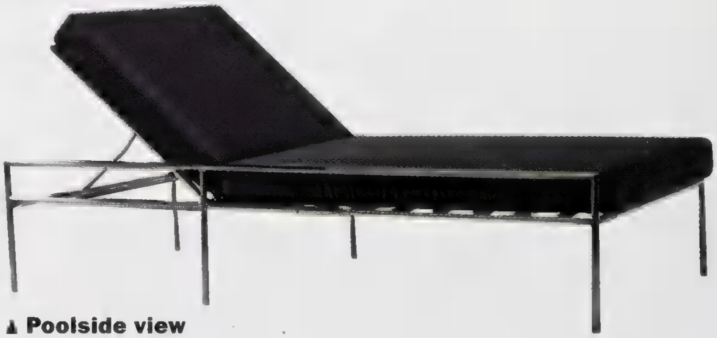
The Frank Lloyd Wright Foundation has authorized Seattle-based Nichols Bros. Stoneworks to reproduce the Oak Park Studio Vase as part of the foundation's licensing program. The vase was originally executed in 1898 for Wright's own architectural studio that adjoined his residence in Oak Park and has never before been available to the public. 800/483-5720. Nichols Bros. Stoneworks Ltd., Snohomish, Wash. **CIRCLE 217**

▲ Foster furnishing

The A900 series, designed by Norman Foster with Thonet, is for indoor and outdoor use. Anodized aluminum frames are fitted with polypropylene seats and backs available in translucent white or anthracite gray. The complete A900 Series includes a glass-topped table, as well as wood, leather, and upholstery seating surfaces for armchairs, lounge chairs, and benches. 877/929-0011. Forms+ Surfaces, Carpinteria, Calif. **CIRCLE 218**

◄ Sleek teak

The Warwick armchair adjusts to five positions—from upright to laid-back. Gently angled teak slats glide into place on solid-brass hardware. Armchairs may be paired with a variety of slatted teak tables or used as occasional chairs around a pool or patio. In the dining position, each measures 40½ inches high, 19 inches wide, and 18 inches deep. 800/776-3336. Smith & Hawken, Trade Sales Dept., Novato, Calif. **CIRCLE 219**



▲ Poolside view

The Vu collection features ⅞-inch round stainless-steel tubing, soft waterproof foam, and wedge-shaped cushions tailored with double-stitched seams; the components are joinery-welded and polished for an invisible transition from one element to the next. The collection was created for contemporary contract and hospitality projects. 626/443-8971. Brown Jordan, El Monte, Calif. **CIRCLE 220**

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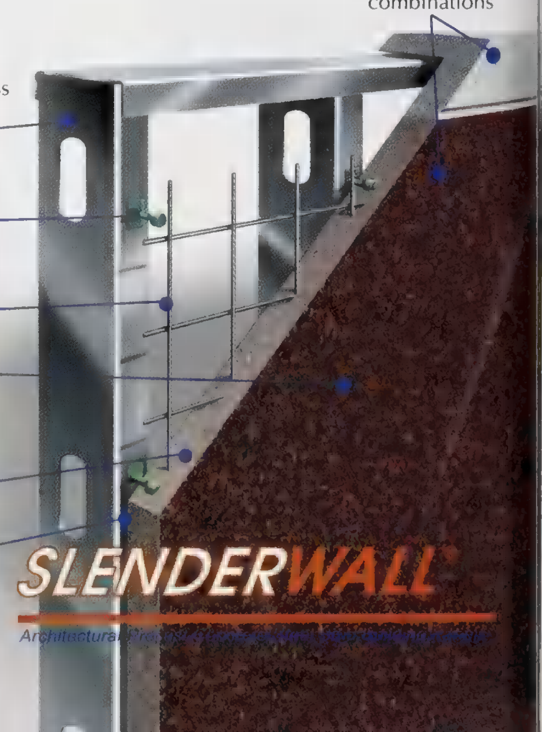
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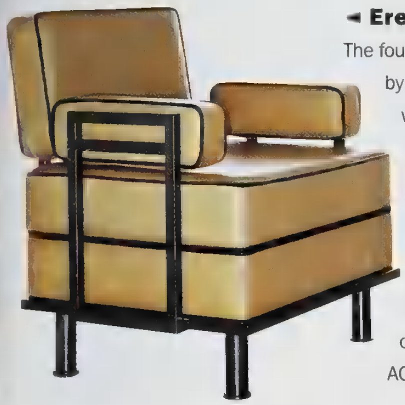
Product Briefs

For three days in June, Chicago again became design-world central when it hosted NeoCon 2001. Below are a few stars of the show. *Rita F. Catinella*

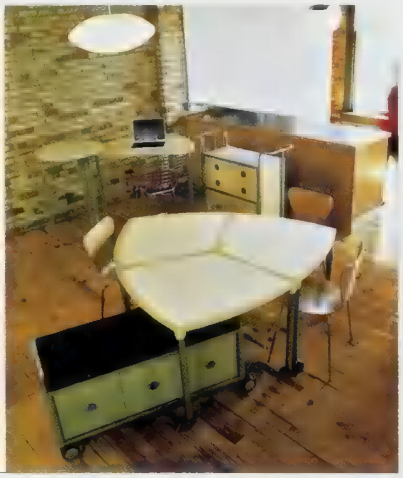


◄ Erector seat

The foundation of the metal CH-I chair, designed by Suzanne Lovell, is an ottoman unit, to which a backing unit, left facing arm, and right facing arm can be attached. The components feature a metal plate, which fastens into a systematic matrix located on the base of the ottoman to enable easy reconfiguration. Chair arms are reversible, and three table-unit options are available. 336/434-5011. AGI, High Point, N.C. **CIRCLE 221**

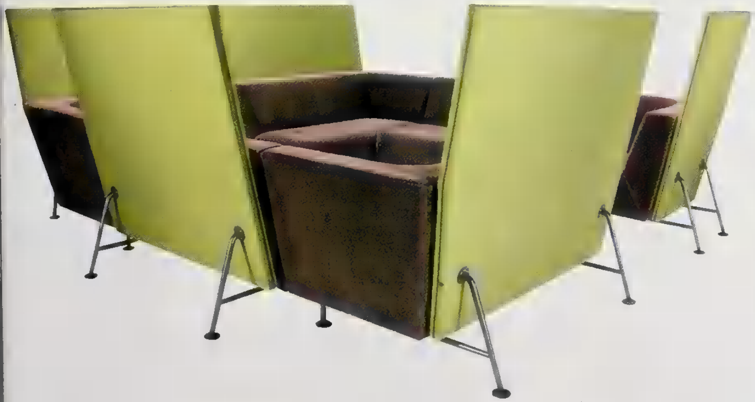
► New kid on the block

NeoCon newcomer izzydesign won an Editor's Choice award for the Clara collection of work furniture. It's no surprise—izzydesign's award-winning team brings years of experience, working for companies such as Haworth, Knoll, and Herman Miller. Clara includes free-standing tables with molded urethane surfaces, storage options, accessories, and power and privacy components. 616/458-7513. izzydesign, Grand Rapids, Mich. **CIRCLE 223**



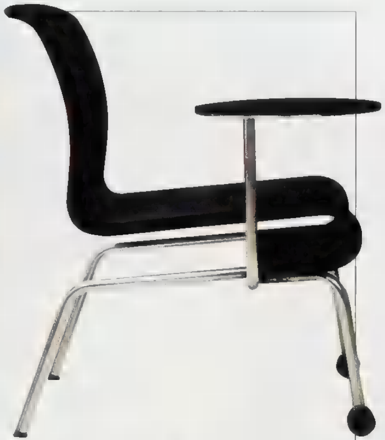
▼ Couth booth

Inspired by the dining-booth experience, Metro offers a new product and category: the Biz "work booth." Biz forms a semi-private setting for groups with temporary tasks that require projects to be spread out, offering an alternative to the confinement of workstations. Corner and straight sections are available with or without upholstered back screens to create a variety of booth-based applications. Biz will be available for purchase in October. 650/697-7900. Metropolitan Furniture Company, Burlingame, Calif. **CIRCLE 224**



Product of the Month Metafloor

MetaFloor, a hybrid carpet and hard surface flooring that offers the durability to withstand the rigors of heavily-wheeled traffic and the slip-resistance and acoustic properties of carpeting, took home this year's Best of NeoCon award. Metafloor's first offering is the Collaborative Voice Collection of four 12-foot products designed by a team including Shashi Caan with SOM, New York; Lucy Aiken-Johnson with TVS Interiors, Atlanta; David Loyola, with Gensler, Santa Monica; and Jaime Velez, with SOM, Chicago. MetaFloor is produced using 50 percent less nylon than typical carpet (reducing the use of oil and energy), and features a secondary backing system of 50 percent recycled content. 800/523-5647. Lees, Greensboro, N.C. CIRCLE 222

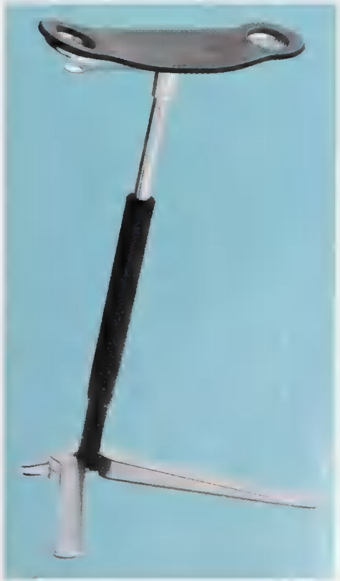


▼ Have a lean

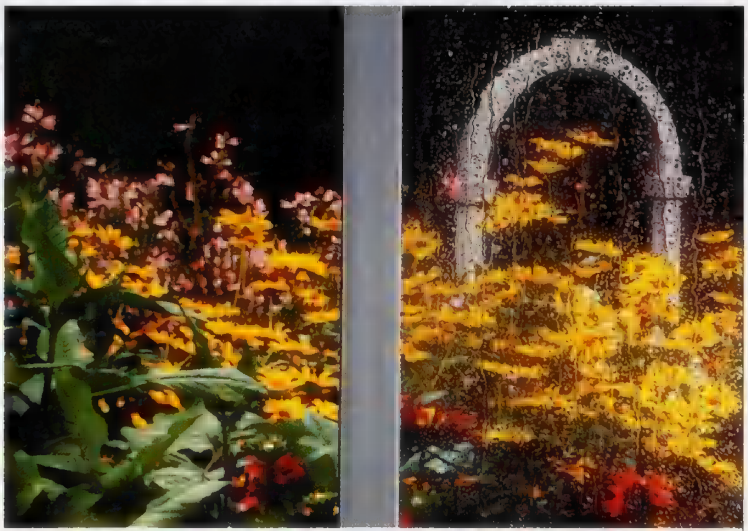
Lean Too provides support for the torso and upper body while an individual's feet are planted firmly on the ground. This alternative-posture product takes the weight and strain off of the lower back, legs, and feet of people required to stand while working. Fashioned after a traditional English walking stick, Lean Too is available in two adjustable sizes. 888/STEELCASE. Steelcase Inc., Grand Rapids, Mich. **CIRCLE 226**

▲ Nothing but net

The seat and back of the Net Series by EOOS is a single tube of black, woven-polyester mesh pulled over a tubular steel frame. The group includes a side chair and a lounge chair (with or without tablet arms and casters) as well as a fully upholstered version. The steel tube frame is offered in the full range of Keilhauer's powder-coated palette and a new nickel-plated finish. 800/724-5665. Keilhauer, Toronto, Canada. **CIRCLE 225**



Product Briefs



▲ Don't tell the window-washer union

Pilkington's new glass offering allows residential and commercial windows and skylights to literally clean themselves. Pilkington Activ self-cleaning glass uses the sun's UV rays to gradually and continuously break down organic dirt. At the same time, it reduces the surface tension of the water, causing it to sheet down the surface and wash away. The windows above have been sprayed with water; the left is Activ glass, the right is not. 866/88 ACTIV. Pilkington N.A., Toledo, Ohio. **CIRCLE 232**

► Severe weather door system

Ceco has introduced the first severe weather door system to meet Federal Emergency Management Agency (FEMA) guidelines. The StormPro 361 door system, designed to withstand severe weather conditions, including tornadic force winds, was developed by Ceco for commercial, industrial, and institutional buildings. The system is on the market after extensive testing at the Texas Tech University Wind Engineering Research Center. The 14-gauge steel door is three-by-seven-feet in size and 1¾ inches thick, with a three-way locking device. It is hinged to a 12-gauge steel door frame that is 5¾ inches thick. 888/CECO-DOOR. Ceco Door Products, Brentwood, Tenn. **CIRCLE 233**

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Product Briefs

▼ Catch that flight

A series of moving walkways, elevators, and escalators has been installed at the new 1.4-billion-dollar Terminal 4 at John F. Kennedy International Airport by Schindler Elevator Corporation. Schindler has installed six moving walkways, 16 elevators, and 12 escalators to move passengers swiftly through the terminal's 1.5-million-square-foot layout. The JFK Terminal 4 project marks the first time that Schindler's new 9500 moving walks have been installed in the U.S. Features include ribbed aluminum floor covers that are soundproofed, glass balustrades, and opaque panels available in various finishes. 973/397-6500. Schindler, Morristown, N.J. **CIRCLE 234**

► Cladding options

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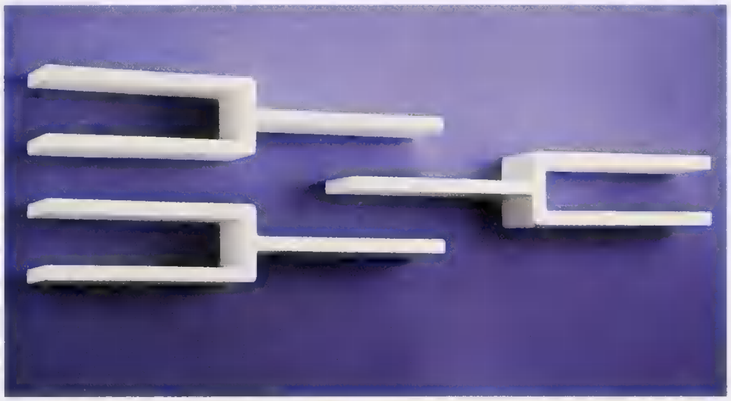
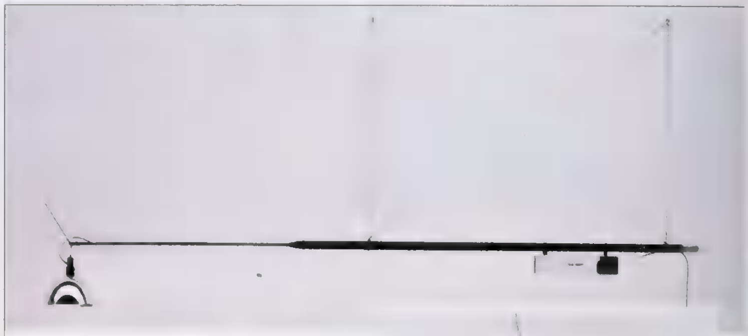
Product Briefs

Over 170,000 people attended this year's International Milan Furniture Fair. Next year's fair (April 10-15) will include kitchen and office furniture exhibitions. *Josephine Minutillo*

▼ Liv'it up

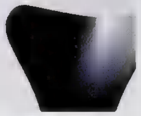
Liv'it started two years ago as part of the Fiam Group. In contrast to the elegant curved-glass furniture of its mother company, Liv'it prides itself on being unpredictable. Its designers, including Christopher Pillet and Fiam founder Vittorio Livi, create pieces that are whimsical and multi-faceted, using a combination of materials and the latest technology. Net, by Jean Marie Massaud, is an injection-molded shelf (8¹¹⁄₁₆ inches high, 45¼ inches wide, 8¹¹⁄₁₆ inches deep) whose pitchfork shape can be variously arranged to create a series of playful compositions. Net is available in light grey, dark grey, blue, and orange. 800/345-0476. Forma & Design Inc., Norwalk, Conn. **CIRCLE 227**





▲ Maurer marvels

The Max Mover, introduced last year, will be available in Fall/Winter 2001. It is a halogen fixture with a telescoping arm that rotates 180 degrees and can be wall-or ceiling-mounted. The Yoohoodoo is a one-of-a-kind chandelier containing LED panels. Though not available for distribution, a limited edition of EL.E.DEE table lamps were manufactured for distribution. 212/965-8817. Ingo Maurer LLC, New York City. **CIRCLE 228**



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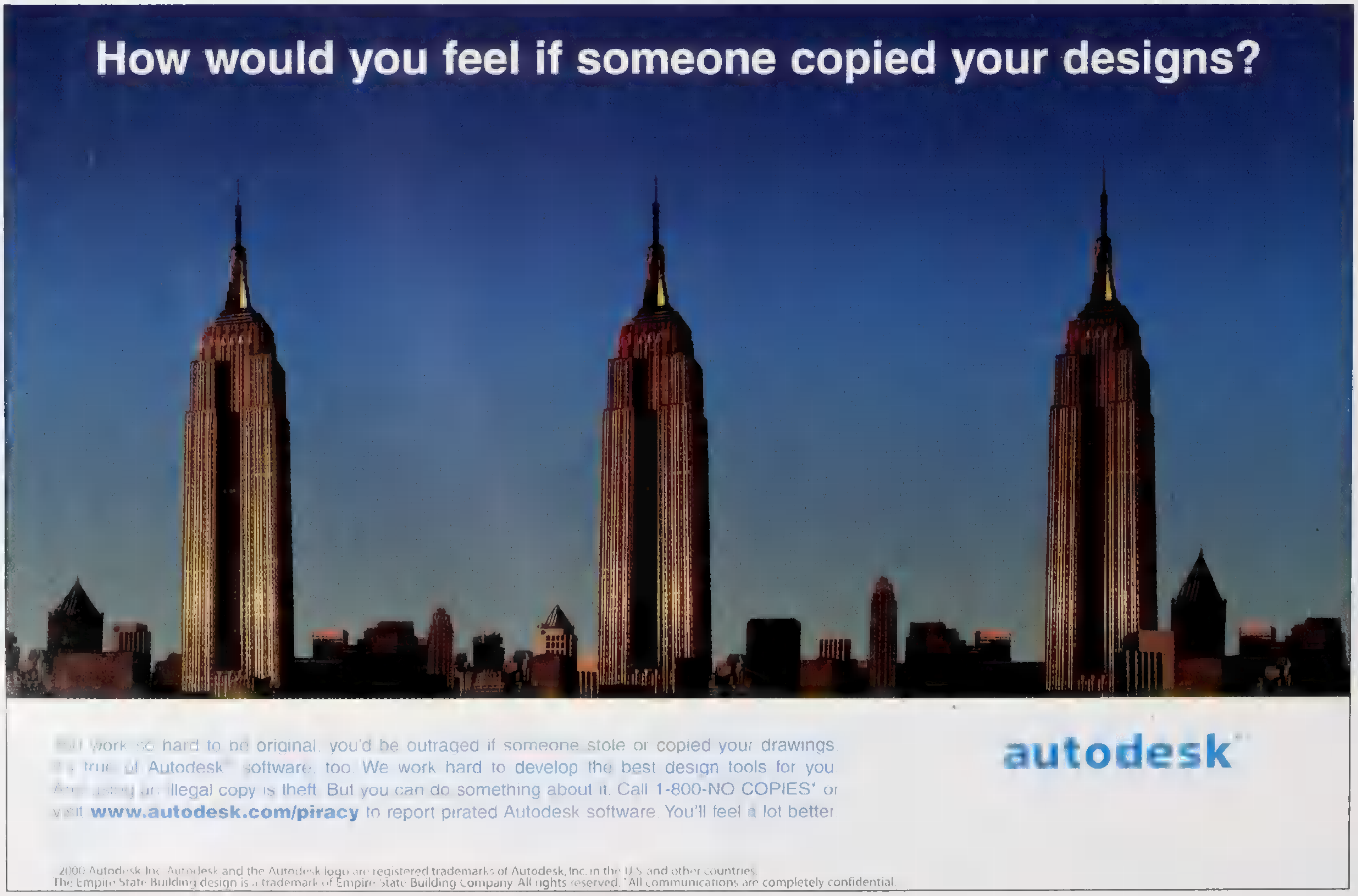

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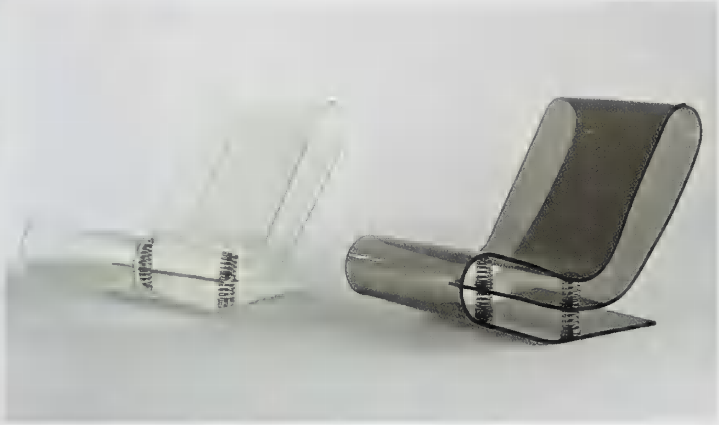
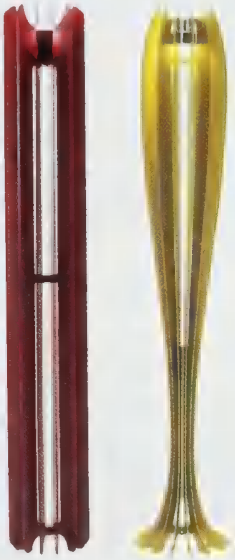
Product Briefs

▼ Singular chaise

Kartell transformed its exhibition space this year into a joyous Italian garden. Among the plants and hedges was a new chaise lounge, LCP, by Martin Van Severen. This piece represents the first in what is expected to be a series of collaborations with Kartell and the Belgian designer. LCP is a chaise lounge produced in a single polycarbonate mould, which folds over on itself. The soft, elastic design is completely transparent and comes in five light colors: crystal, blue, brown, green, orange, and grey. It will be available worldwide in December. 212/625-1494. Kartell U.S.A., New York City. **CIRCLE 229**





▲ Haute halogens

Rha and Thor, two floor lamps for Foscarini by designers Luca Nichetto and Giampietro Gai, were introduced at the Fair's Euroluce exhibit. The halogen lamps, equipped with dimmers, consist of a series of radially arranged aluminum blades, either straight (Thor) or curvaceous (Rha). 203/407-8000. I.L. America Inc., Hamden, Conn. **CIRCLE 230**

▼ Felt furnishings

Among the most notable designers exhibiting work outside the fairgrounds was Dutch designer Claudy Jongstra. Though her background is in fashion, she uses her felt fabrics to create curtains, carpets, cushions, and upholstery. She has collaborated with such architects as Will Bruder and Steven Holl in creating wall hangings for interiors. Her fashions are available at The Apartment in New York City. 31-20-42-84-230. Amsterdam. **CIRCLE 231**

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SPECIFYING FOR PERFORMANCE: UNDERSTANDING KEY SPECIFICATION CRITERIA FOR WALLS, CEILINGS AND FLOORS

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Answers to Continuing Education Questions from Page 145

1. Key specification criteria for walls, ceilings and floors include fire-resistance, structural integrity, sound control and abuse resistance. Fire resistance and structural integrity ensure key life-safety performance. Sound control is not covered by most building codes, but is an important factor to ensure customer satisfaction. Abuse resistance offers substantial construction life-cycle benefits. ASTM is currently reviewing test methods to measure abuse resistance. By incorporating these and other code criteria early in the design process, architects are able to work more efficiently with code officials. Successful architects also develop an understanding of the key attributes that determine what materials and systems deliver the best results for project requirements.
2. ASTM establishes testing procedures to define the minimum performance criteria needed to meet code requirements. ASTM does not, however, actually conduct tests or verify that any specific product or system meets the standards it establishes. That work is accomplished by UL and other independent verification companies. ASTM standards and UL testing protocols provide specifiers with assurances that the products and systems they select will meet the criteria of major code bodies, such as BOCA (The Building Officials and Code Administrators International), ICBO (The International Conference of Building Officials), SBBCI (The Southern Building Code Conference International) and ICC (The International Code Council).
3. Manufacturers frequently use modified ASTM testing protocols as they introduce new products and systems. The modified tests are developed to create performance standards where none currently exist or when existing ASTM test protocols do not fully apply to the unique features or attributes of an existing product or system. Modified tests do provide valuable performance information, but they can also make it more difficult to compare products and systems. Two manufacturers offering similar products may publish two very different modified test results that demonstrate two very different product performance capabilities. So, don't assume you're making "apples-to-apples" comparisons when reviewing modified ASTM tests.
4. ASTM E119 measures heat transfer and structural integrity of assemblies. The goal of the heat transfer test is to determine at what temperature the surface or adjacent materials on the side of the assembly not exposed to the heat source combust. The structural integrity of the system is measured using a "hose stream" test. This test evaluates how well an assembly stands up to impact from falling debris . (e.g. a floor truss).
5. Flanking sound refers to sound leakage. Elements that lead to flanking include improperly sealed floor and ceiling junctions, connecting ductwork, poor duct seals and electrical outlets. Other important sound control measurements include Sound Transmission Class (STC), Ceiling Attenuation Class (CAC), Noise Reduction Coefficient (NRC) and Articulation Index (AI). STS measures how much sound will be reduced when traveling through a partition. CAC measures how much sound energy will be dissipated when it is transmitted through the ceiling of one room into an adjacent room through a shared plenum. NRC measures sound absorption of a specific material. AI measures the degree of privacy between two locations. It is an adaptable measurement that can be used in open or closed office spaces, and accommodates any speech or background noise level.

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CIRCLE 73 ON INQUIRY CARD

Product Literature

Hardwood hints

The Hardwood Council offers specifying tips to help building professionals produce projects with North American hardwoods. The council's *Book Behind the Look* is a full-color, 28-page booklet on how to select hardwoods. Topics include: Ways to design a custom-look crown molding on a tight budget; creative applications for lower-cost hardwood species; and smart specifying by sawing method and lumber grade. 412/281-4980. The Hardwood Council, Oakmont, Pa. **CIRCLE 236**

Dimmer brochure

Leviton's new Mural Collection brochure showcases the company's line of residential-grade Decora-style Mural dimmers. The new line of all-digital dimmers includes standard, preset, and scene-capable models, ideal for controlling fluorescent, incandescent, and low-voltage lighting loads in any home. The brochure provides feature and benefit information for all models, shows various application settings, and includes typical wiring diagrams. 800/323-8920. Leviton Manufacturing Co., Inc., Little Neck, N.Y. **CIRCLE 237**

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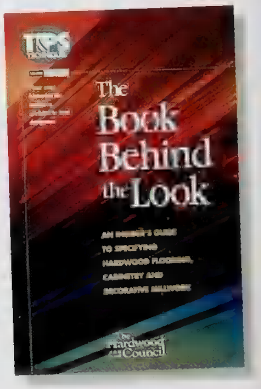
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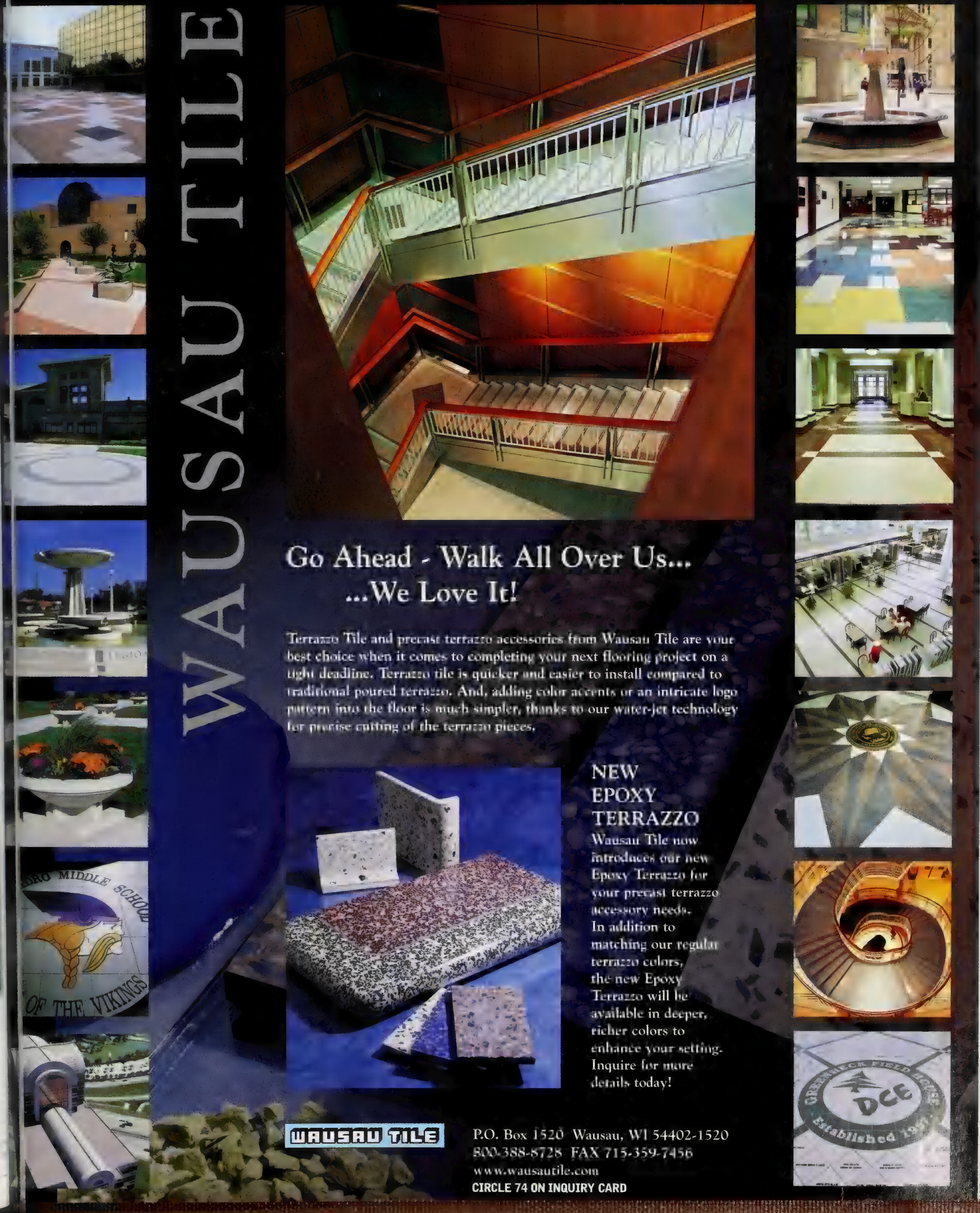

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Product Literature

Outdoor lighting

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Skyline brochure

Wausau Window and Wall Systems offers "Wausau's Windows on Gotham" a free informational and illustrative brochure on its many contributions to the New York skyline. Wausau has engineered window and wall systems for a variety of buildings, including New York's Cornell University Medical College, St. Regis Sheraton, and the Trump Building at 40 Wall Street. 877/678-2983. Wausau Window and Wall Systems, Wausau, Wis. **CIRCLE 240**

Great bridges of the decade

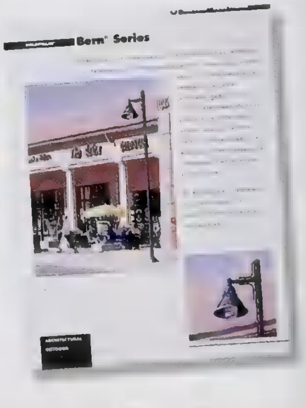
New literature from the Concrete Reinforcing Steel Institute honors five great concrete bridges built between 1990 and 2000. The 12-page brochure tells the stories of bridges constructed in the last decade that represent the design and construction industry's most technically advanced and innovative concrete achievements. 847/517-1200. CRSI, Schaumburg, Ill. **CIRCLE 241**

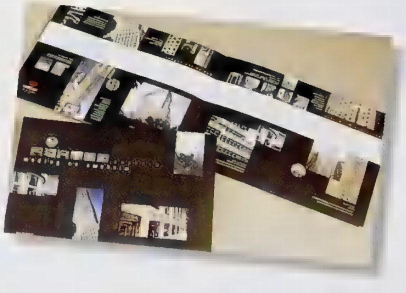
Floor underlayment

An eight-page brochure from USG provides detailed information on the features, benefits, and performance of the company's new LevelRock Brand Floor Underlayments. The brochure overviews the performance characteristics of the four LevelRock options currently available. 800/487-4431. USG Corporation, Chicago. **CIRCLE 242**

Property maintenance code

The 2000 *International Property Maintenance Code Commentary* addresses maintenance requirements for the interior and exterior of structures, and space requirements for determining maximum occupancy. The IPMC also contains requirements for heating and plumbing in existing workplaces, hotels, and residences, as well as minimum light and ventilation criteria. 800/214-4321, x371. BOCA, Country Club Hills, Ill. **CIRCLE 243**





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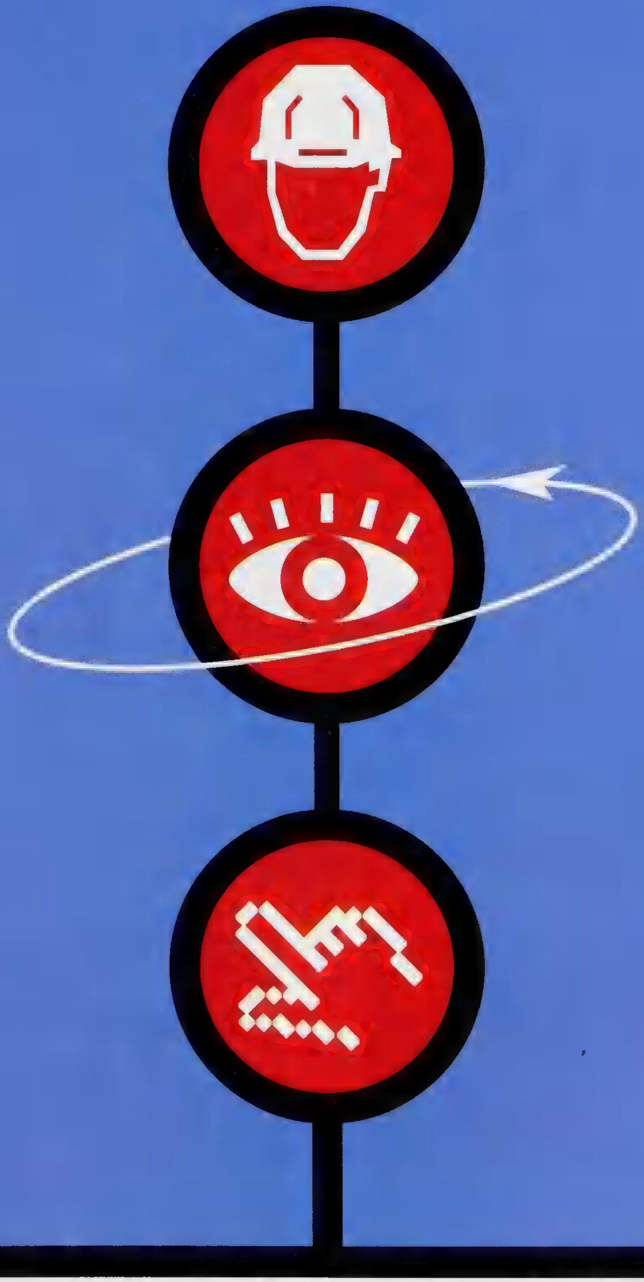

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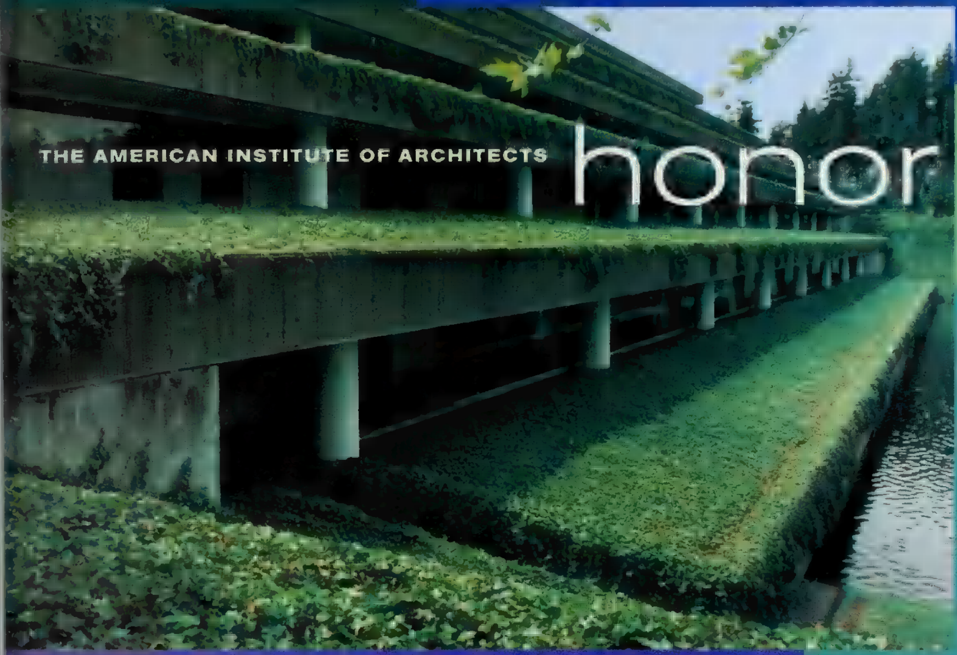

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ANSWERS TO: "DRAIN IT RIGHT: WETLANDS FOR MANAGING RUNOFF"

Questions appear on page 134. To receive CES credits, fill in the education reporting form below or on our Web site (www.architecturalrecord.com).

1. Urbanization has led to more concrete paved land and less vegetated land. When rainwater falls on paved land, it ends up as runoff. The runoff picks up sediment, oils, grease, metals, and other pollutants. This runoff then flows into natural bodies of water, where it impairs water quality and harms aquatic plants and wildlife. Excessive runoff also stresses sewer systems to their capacity.

2. Wetlands reduce flooding by storing stormwater and slowly releasing it back to natural waterways. They prevent erosion by stabilizing soil. They decrease the velocity of stormwater runoff and allow sediments and solids to settle out. While wetlands are a critical feeding ground and habitat for fish, waterfowl, and other wildlife, their plants and aquatic life cleanse surface and groundwater. Plants break down and synthesize organic pollutants such as oils and grease, and use the metals and minerals in urban runoff as nutrients. Ponds and plant life also diminish the urban heat island effect from paved areas.

3. The amount of water runoff is calculated based on the amount of water it would receive during a storm of known intensity and duration. The more paved surfaces a building site has, the more runoff will be generated. To reduce the threat of killing plants and animal life with the high-pollutant first flush of runoff, a pretreat runoff area with vegetation swales, filters, or underground infiltration beds is often considered. The size and configuration of the wetland to be constructed is determined from the runoff projections and the site's topography.

4. Wetland growing conditions are most fragile when seeds are germinating and plants are first becoming established. Landscaping services are not yet familiar with caring for wetlands, so extra care needs to be given to establishing the vegetation. Architects and other project team members can accommodate this extra care by altering the construction schedule to initiate landscaping and site elements earlier than usual. This allows time for vegetation to establish itself, since wetland plants often flourish at different rates.

5. The permit and approval process can be aided when natural treatment systems are part of development plans, because review boards are increasingly environmentally conscious. Economically, land-based water treatment can reduce or eliminate the need for conventional infrastructure. Aesthetically, wetlands can inform design elements that allow users to enjoy outdoor features. Architects can be agents of change who educate clients about using constructed wetlands, because it requires action early in a project, when the architect's involvement is highest. When using constructed wetlands, the over-project budget may need to be adjusted to fund the design, and changes in the way the construction is planned may occur.

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☐ "Drain It Right: Wetlands for Managing Runoff" [page 127]

☐ "Understanding Key Specification Criteria for Walls, Ceilings, and Floors" [page 141]

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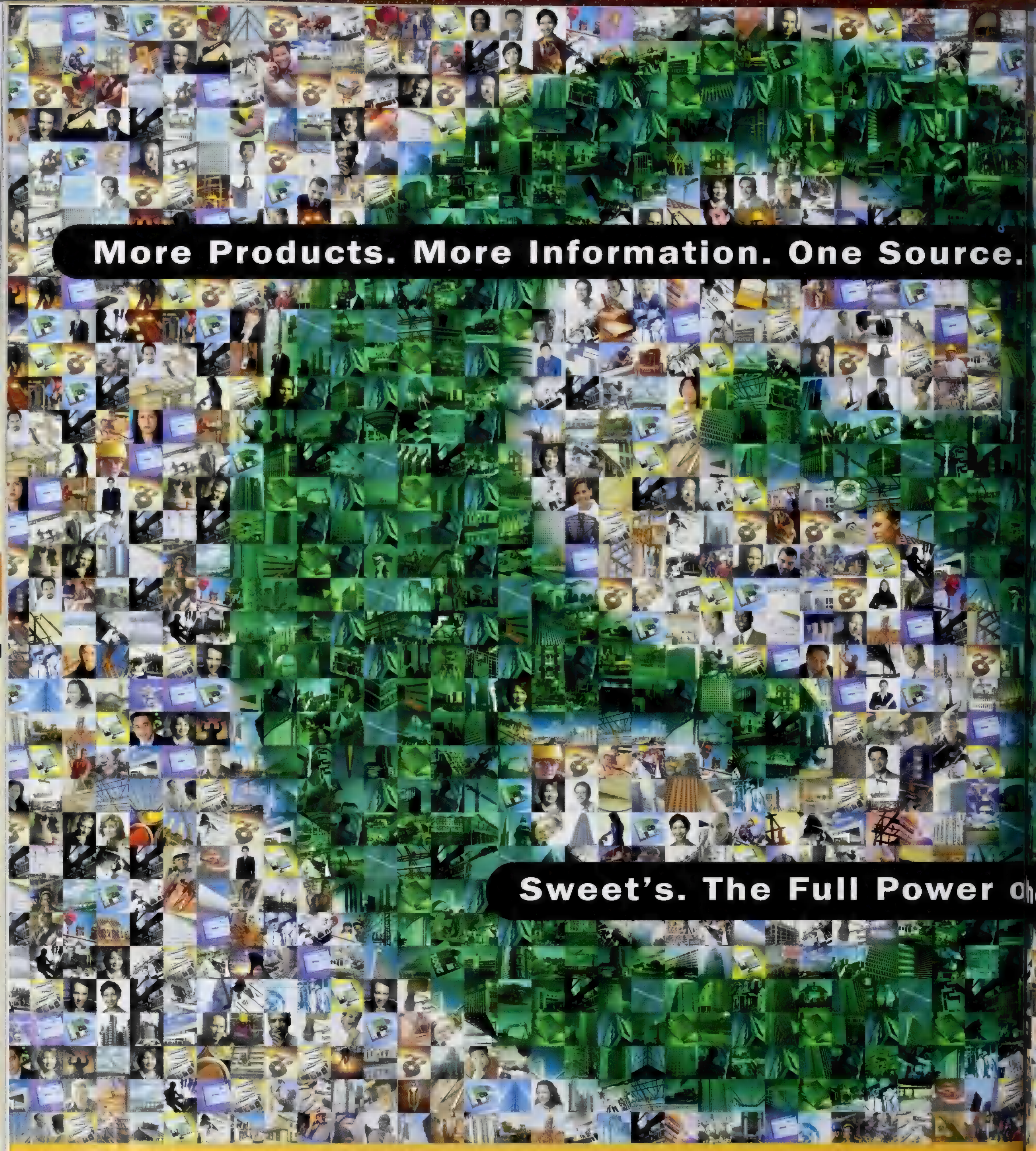
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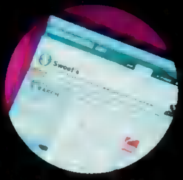
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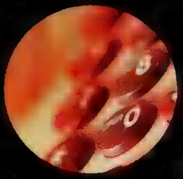
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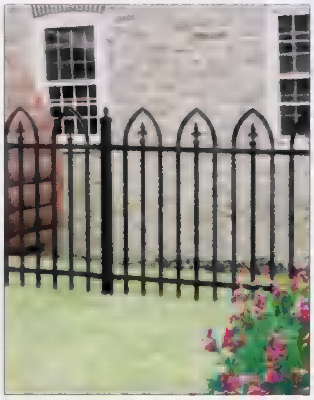

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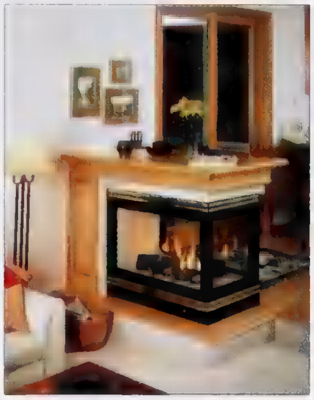

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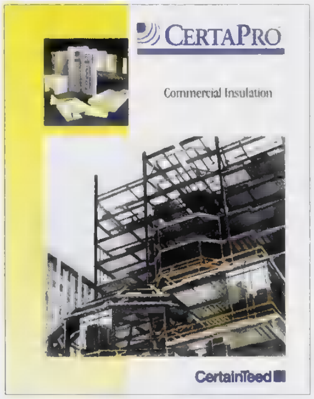

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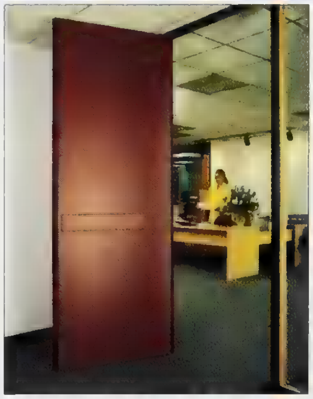

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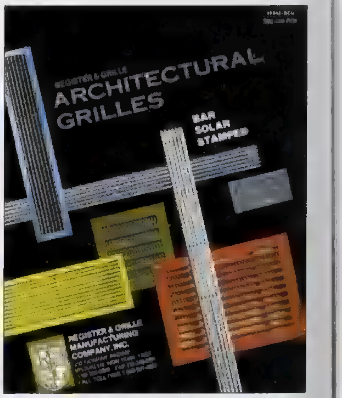

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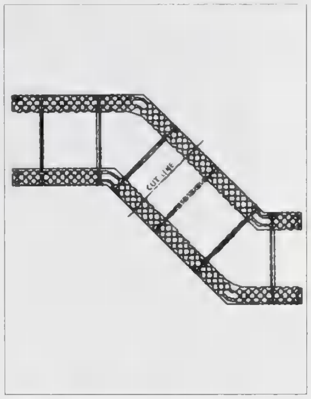
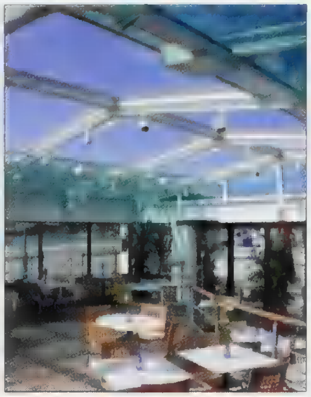


The Arxx™ High Performance Wallsystem now includes the industry's first Double 45° Corner form. One simple cut allows a left and right hand corner form. Currently, the Double 45° Corner forms are available in the 6" and 8" core sizes. Arxx – creating solutions for all your design challenges.

Arxx Building Products

CIRCLE 159 ON INQUIRY CARD

Retractable Roof Enclosures & Skylights



Custom designed retractable roof panels and operable skylights create year-round settings. At the touch of a button, motorized panels retract to open 50% of the roof area, letting in sunshine and fresh air. Maintenance-free thermally broken aluminum framing. Enclosures ideal for restaurants, patios, pools and atriums. For more information, call 800-267-4877, Email: openaire@openaire.com or visit www.openaire.com

OpenAire Inc.

CIRCLE 160 ON INQUIRY CARD

Melton Classics: Columns, Balustrades, and Mouldings

Melton Classics architecturally correct columns, balustrades, and architectural details, are the industry standard for quality and design. Columns are available in fiberglass, resin composite, GFRC, GRG and wood. MarbleTex™ Balustrades and columns are integrally colored and require no painting. Ask us about our complete line of architectural ornamentation in Melton Stone™ cast stone. Call toll free 800-963-3060 or visit www.meltonclassics.com

Melton Classics

CIRCLE 161 ON INQUIRY CARD

Specify This.

Did you know one of the most cost-effective ways to produce high-quality, frameless cabinet systems is CabParts? With over 1,500 sizes & types of cabinet boxes, CabParts are easily assembled to produce cabinet installations of superior quality. Precisely dimensioned, competitively priced & easily assembled on site, mean you have more control over your casework than possible through alternatives. Call 970-241-7682 or visit our website for the full story. www.cabparts.com

CabParts

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Discover An Important Difference

Preferred by homeowners, our concrete segmental retaining walls provide a cost-effective, structurally sound alternative to timber, poured-in-place or crib walls. Our network of manufacturers assure product availability and offer technical support for any project. Visit www.anchorwall.com or call 877-295-5415.

Anchor Wall Systems

CIRCLE 163 ON INQUIRY CARD

Concord Horizon-The Commercial Accessibility Solution

Concord Elevator presents the Horizon fully enclosed "LULA" elevator. Its innovative 1:2 cable hydraulic drive system delivers reliable, quiet & smooth operation while serving two to six stops. The Horizon is an ideal commercial accessibility solution. Standard features include emergency battery powered lowering and door operations, a slack cable safety device and emergency cab lighting. For information, please cal 800-661-5112 or visit www.concordelevator.com

Concord Elevator Inc.

CIRCLE 164 ON INQUIRY CARD

Aluminum Component Railing Systems

CableRail™ pre-engineered, component based, aluminum railing systems combine the strength & low maintenance of aluminum with innovative designs that assure lasting beauty, structural integrity, & easy installation. Stanchions come in a wide variety of powder coated finishes & are made from heavy gauge 6063-T6 aluminum extrusions that can be quickly cut & assembled on-site. Infill options include glass, aluminum pickets or stainless cables. Free brochure, 1-800/888-2418.

Feeney Wire Rope

CIRCLE 165 ON INQUIRY CARD

TO ADVERTISE: Contact Ally Wingate
T: (800) 484-4042 ext 3042 / F: (770) 889-9152
E-mail: Ally_Wingate@McGraw-Hill.com

MANUFACTURERS' SPOTLIGHT

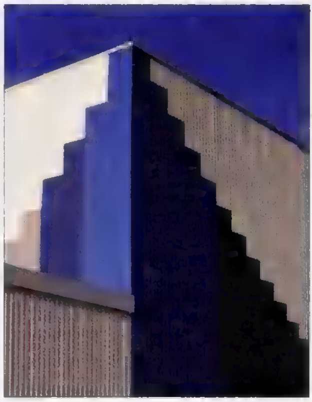
Curved Solutions

Luxalon Curved Solutions, an exposed grid system by Hunter Douglas, provides the opportunity to create both volume & sculpture. Flowing ceiling surfaces can complement a variety of interiors & enhance acoustical performance. Available in both stocked radii & custom radii, Curved Solutions metal ceiling systems are economical & easy to install. For additional information call 800-366-4327 or visit www.hunterdouglasceilings.com

Hunter Douglas, Inc.

CIRCLE 166 ON INQUIRY CARD

Now, Insulated Metal Panels from Thyssen Bausysteme



For more than a quarter century, international architects have opted to enclose their buildings with exterior metal panel systems from Germany's Thyssen Bausysteme GmbH. Now, insulated metal panels from this ThyssenKrupp Steel company are available in North America. These project-proven, competitively priced components offer new options for demanding designers. Contact authorized distributor New Century Building Systems. Call (856) 863-2666.

New Century Bldg. Systems

CIRCLE 167 ON INQUIRY CARD

Invisible Swing Gate Operators

FAAC is the world's largest specialized manufacturer of hydraulic operators for swing, slide and barrier gate systems. The Model 760 hydraulic swing gate operator is designed specifically for in-ground installation for residential and light commercial applications. Its power and total invisibility make the 760 ideal for large ornate gates. Call 1-800-221-8278 for a complete FAAC product brochure or visit www.faacusa.com.

FAAC International, Inc.

CIRCLE 168 ON INQUIRY CARD

Dry Dimensionally Stable Timbers Now A Reality

When architects specify large timbers for such projects as Bellevue Square (pictured above) or Disney's Grand Californian, increasingly they approach Fraserwood Industries Ltd. Fraserwood operates the world's largest Radio Frequency/vacuum kiln dedicated solely to the drying and subsequent dimensional stabilizing of timbers of all dimensions up to 40' long. Resawing, planing and texturing also available. Please call 604-892-7562.

Fraserwood Industries Ltd.

CIRCLE 169 ON INQUIRY CARD

PepperMint™ & MiniMint™ Showcase Collection

The PepperMint™ & MiniMint™ Showcase Collection combines the warmth of wood & glass, with the elegance of sleek elliptical & round aluminum profiles. A variety of tops are available in rich wood finishes & colors. These new showcases present solutions for showcasing important articles & documents in freestanding, wall mounted & countertop display cases. The handsome profiles of these cases enhance the value of their contents.

Peter Pepper Products, Inc.

CIRCLE 170 ON INQUIRY CARD

Architectural Bird Control

Effective, inconspicuous and humane Nixalite stainless steel bird barriers are now available with blunt or sharp points. Nixalite can be installed almost anywhere a bird can land to prevent bird damage. EnduraNet bird netting is a discrete knottless net that simply prevents birds from accessing protected areas. With over 51 years of bird control experience, Nixalite will assist you with any bird control problems. Free samples & catalogs are available. 800-624-1189 or visit www.nixalite.com

Nixalite® of America Inc.

CIRCLE 171 ON INQUIRY CARD

COVERMATE™ Converts a Gym for Multi-Use Purposes

COVERMATE™ is a mobile, floor cover handling and storage system designed to quickly convert a gymnasium by installing a temporary protective floor cover to allow non-athletic use. Handling is even easier with the POWERMATE™ power winder and COVERCLEAN™, a patented brush system that sweeps the cover during take-up. For more information and a video, call 800-387-5808, fax 416-742-6837 or visit www.covermaster.com

Covermaster Inc.

CIRCLE 172 ON INQUIRY CARD

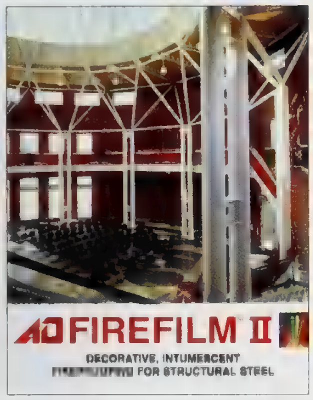
Rear Projection SMART Board 3000i

The Rear Projection SMART Board 3000i is the newest addition to the SMART Board family of touch-sensitive interactive whiteboards. With it, users can write and save notes to a computer and control applications directly from the Board's large, touch-sensitive surface. At only 29" deep, 3000i is designed to combine the benefits of rear projection with the functionality of a SMART Board for smaller meeting spaces.

SMART Technologies

CIRCLE 173 ON INQUIRY CARD

Decorative, Thin-Film Intumescent Fireproofing

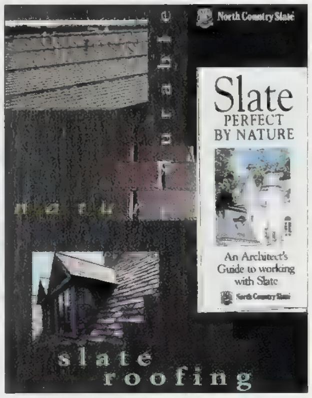


Improved spray characteristics & ratings up to 3 hours! A/D FIREFILM®II permits designers to use the appearance of exposed steel with the steel protected from fire. The product is applied as a thin-film coating 0.4 to 3.3 mm (16 to 130 mils) thick. When exposed to fire it expands to form a meringue-like insulating layer up to 4 in. thick. A/D COLORCOAT topcoat is available in a wide range of colours. Call 800-263-4087 or 416-263-4087. Internet: www.adfire.com See us in Sweets.

A/D Fire Protection

CIRCLE 174 ON INQUIRY CARD

Slate Roofing



Natural North Country Slate® For enduring character, nothing else compares. No wonder—it's perfected by nature! Free product brochure showcases the wide variety of sizes and colors, and comes with our Architect's Guide to working with this remarkable roofing material.

North Country Slate®

CIRCLE 175 ON INQUIRY CARD

Shipping Worldwide

Architectural Pottery is a commercial manufacturer of large landscape planters & ethnic reproductions in FIBER-CRETE (GFRC) ARCHSTONE (FRP) & English Style Sandstone (with GF RC). Architectural pottery is the largest importer of handmade Greek & Italian terra cotta in the U.S. Highlight your latest project with the finest imported & custom made pottery available. Call now for a free catalog (888) ARCHPOT or visit www.archpot.com; fax: 714-898-5109.

Architectural Pottery

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Keystone Ridge Designs, Inc. is the architect's choice for premier site amenities. Offering a full line of steel furnishings, we pride ourselves on exclusive designs and our patented powder coat finish, KEYSHIELD,™ that is unparalleled in the industry. Quality, craftsmanship, and dedication to your creative vision are the hallmarks of Keystone Ridge Designs. For more information please call 800-284-8208 or e-mail: KeystonRdg@aol.com. www.keystoneridgedesigns.com

Keystone Ridge Designs

CIRCLE 177 ON INQUIRY CARD

Quick-Spec..the desk top companion architects!

The new Fire Glass Quick-Spec from InterEdge Technologies offers a fast, finger-tip reference to a complete range of fire & safety rated products. For in-depth product information & options, manufacturing video & CSI specifications just slip out the CD & go. It's a must for those who don't have time to wade through the office library or search the web for clear fire & safety glazing solutions.Fax:415-289-0326, email: interedgemsf@aol.com; www.firesafe-glass.com.

InterEdge Technologies

CIRCLE 178 ON INQUIRY CARD

Carriage House Shangle™

Utilizes CertainTeed's exclusive Super Shangle® construction with two full-size base shingles, resulting in virtually four layers of shingle protection and 8-inch exposure when applied. This super-heavy-weight fiber glass shingle (355 lb. per square) also features a unique chamfered cut for scalloped appearance. UL Class A; lifetime limited, transferable warranty; algae-resistant UL Certified to meet ASTM D 3462.

CertainTeed Corporation

CIRCLE 179 ON INQUIRY CARD

Fireframes™

Technical Glass Products introduces Fireframes™ – fire-rated door and window frames with sleek, European styling. Fireframes™ allow large expanses of glass, and are well-suited to applications where aesthetics are important. Available in a Designer Series and a Heat Barrier Series, the doors and frames carry ratings up to 2 hours. For complete information call 800-426-0279 or visit www.fireglass.com

Technical Glass Products

CIRCLE 180 ON INQUIRY CARD

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Columns, pillars, pilasters and posts available in wood, PolyStone™ and fiberglass. Interior, exterior. Variety of sizes and styles. Competitive prices. Job-site delivery. Worldwide shipping. Our Second Edition 2000-2001 Idea Book features an exciting collection of column projects. Includes Columns Product Portfolio, $20. Columns Product Portfolio $5 (credited to first order). Free flier. 1.800.486.2118 • Telefax 910.763.3191

Chadsworth's 1.800.Columns®

CIRCLE 181 ON INQUIRY CARD

TO ADVERTISE: Contact Ally Wingate
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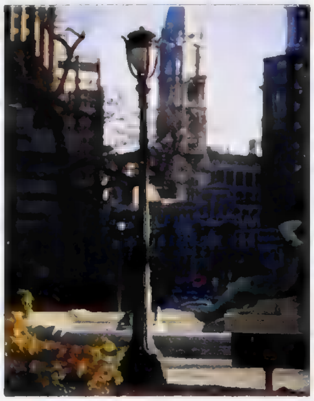
E-mail: Ally_Wingate@McGraw-Hill.com

Cast Aluminum Lighting

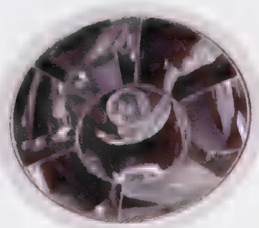


Sun Valley Lighting manufactures an extensive line of Standard & Custom cast aluminum lighting poles & fixtures in all period styles. Our 50 years of design & manufacturing experience provides you with unexcelled product quality. Our staff of designers, engineers, and tool makers are here to assist you. Our in-house foundry assures quality and prompt delivery at competitive costs.

Sun Valley Lighting

CIRCLE 182 ON INQUIRY CARD

Multifunction LouverLites by WILA

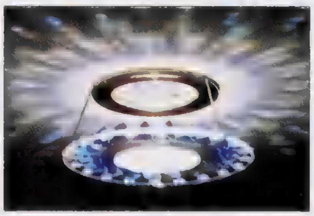


Multifunction is a unique combination of both the CFL and MR-16 lamps in a single ultra-shallow depth fixture. For applications such as conference rooms, teller stations, and other situations where controllable task ambient lighting from a single luminaire is preferred. Multifunction comes available with several different LiteOptic's in order to customize the working environment.

WILA

CIRCLE 183 ON INQUIRY CARD

Contemporary Crystal Creations



The Aura of Light. Orbit North America Ltd. is proud to introduce a line of breathtaking crystal creation panels from the House of Swarovski for its recessed down-light series. Crystal making at its best, the House of Swarovski is known for its design excellence, innovation and unparalleled crystal quality. We also offer a customizable projection crystal panel for use in restaurants, bars, clubs, corporate offices or retail environments. www.orbitlight.com

Orbit North America, Ltd.

CIRCLE 184 ON INQUIRY CARD

ORBIS Luminaires

New ORBIS luminaires from EXCELITE feature translucent faux alabaster or uniform color diffusers in three diameters. Arrange ORBIS for close-to-ceiling, pendant, or wall mounting. Designed for compact fluorescent lamps up to two 32-watt triple tubes. Exclusive lift-and-rotate diffuser connection allows a discrete, completely unadorned look, or enhance the luminaire with a selection of ornaments as shown.

EXCELITE, Inc.

CIRCLE 185 ON INQUIRY CARD

Architectural Luminaries

Space Cannon Illumination proudly introduces our architectural color wash HSR fixture, the Focus, available in 700w and 1200w power sources. This fixture has an onboard computer to control the 3 dichroic tubes, zoom and shutter and includes a kit of 4 lenses for beam shaping up to 90°. 888-705-1028 www.spacecannon.com

Space Cannon

CIRCLE 186 ON INQUIRY CARD

Lighting Fixtures

Times Square Lighting's condensed catalog contains our complete line of line and low voltage specification grade lighting fixtures. Numerous mounting options as well as accessories for our fixtures are available. Times Square Lighting, Rte. 9W, Stony Point, NY 10980, 914-947-3034.

Times Square Lighting

CIRCLE 187 ON INQUIRY CARD

Timeless American Design ©2000 FLLWFDN

Taliesin®-1 Lamp, designed by Frank Lloyd Wright® in 1925. Taliesin®-Mini, adaptation of original design. Available in several finishes. Yamagiwa is the sole licensee of the FLLWFDN authorized to produce lighting. Other types, floor lamps, wall sconces, and pendants available. www.yamagiwausa.com Ph: 888-879-8611, 31340 Via Colinas, #106, Westlake Village, CA 91362

Yamagiwa USA Corp.

CIRCLE 188 ON INQUIRY CARD

UV/FX Scenic Productions

UV/FX wrote the book on Ultra-Violet Visual Effects which are designed, art directed and painted on any surface from floor to ceiling. UV/FX specializes in Dual Image Scenery, Complete Invisible Treatments, Day to Night Effects, 3-D Scenery and more for changing themed walls, backdrops and ceilings. www.uvfx.com. Tel/Fax 310-392-6817.

UV/FX

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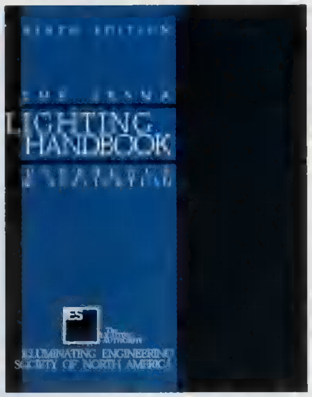
The Illuminating Engineering Society of North America

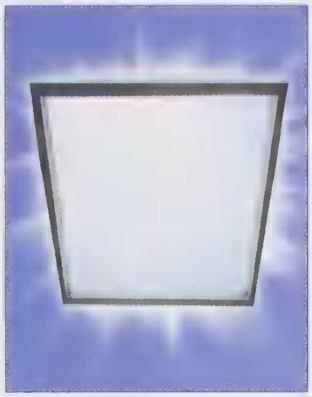


IESNA was founded in 1906 to advance knowledge & disseminate information for the improvement of the lighted environment to the benefit of society. IESNA serves 10,000 members & offers over 100 standards & publications, the IESNA Lighting Handbook, LD+A, & hosts LIGHTFAIR & the Annual Conference. To receive a copy of the Lighting Source Catalog, or to order publications, contact Albert Suen at 212-248-5000, ext. 112 or e-mail asuen@iesna.org. Visit our website at www.iesna.org

IESNA

CIRCLE 190 ON INQUIRY CARD

Insulated Translucence in Glass



Quality buildings can now have all the benefits of insulated translucent glazing PLUS the timeless beauty & durability that comes only from glass. Unlike plastic solutions, SOLERA® insulated translucent glazing units deliver over 70% light transmittance plus U values of .25 to .14. Curtain wall, sloped, skylights....glass to architectural spec. Call 902-794-2899 or visit www.advancedglazings.com

Advanced Glazings, Ltd.

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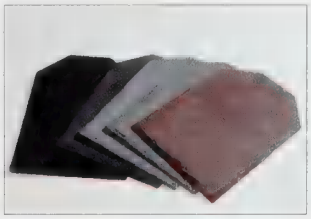
Celestial Slate Tile



EcoStar, a leading manufacturer of premium steep slope roofing products, is proud to introduce their newest fire retardant roofing product, Celestial Slate Tile. Celestial Slate offers the beautiful look of slate yet is lightweight and $^{1}/_{2}$ the cost of a traditional slate roof. Celestial Slate provides a 50-year product warranty, Class 4 Hail Resistance, 100 mph wind warranty and a UL Class A Fire Rating. Celestial Slate is made of 80% post-industrial materials. 800-211-7170.

EcoStar

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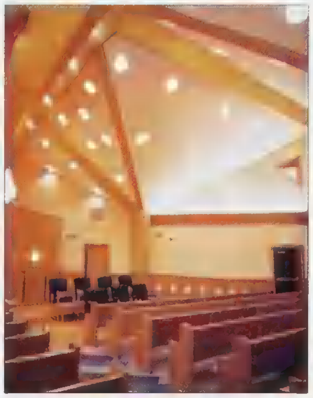
Acoustical Stretch Ceiling System



The Eurospan System is a wide span acoustical treatment with a smooth, white, monolithic appearance. With NRC values from .75 to 1.00, Eurospan has excellent acoustical absorption. Use the Eurospan System for flat or vaulted ceilings, domes, barrel vaults, and clouds. Perfect for new construction or renovation. Further information: (800-359-3312); www.euro-span.com

Wall Technology

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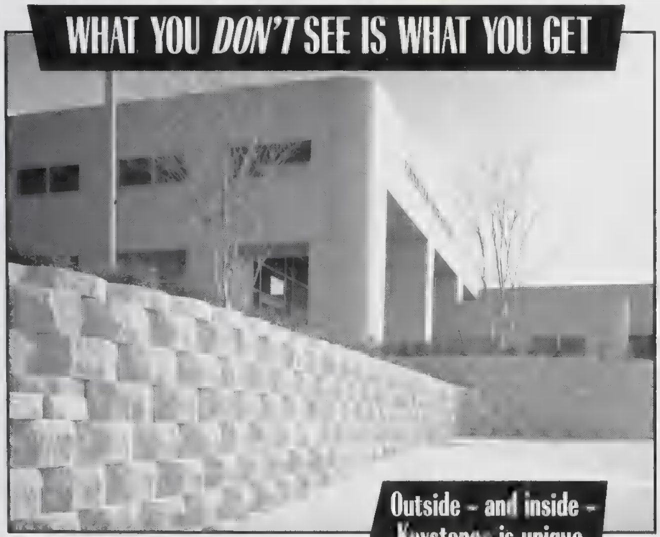
WHAT YOU *DON'T* SEE IS WHAT YOU GET



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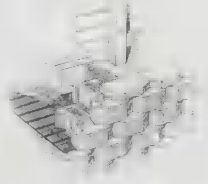

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CIRCLE 80 ON INQUIRY CARD

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Only First Place is awarded. There are no limits to the number of First Place awards, consisting of US $1,000, an engraved trophy and royalty. Entries close September 1, 2001. All entries must be mailed Registered Return Receipt Mail. For further information please call us.

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CIRCLE 81 ON INQUIRY CARD

THE AMERICAN ARCHITECTURAL FOUNDATION

Helping people understand the importance of architecture in their lives

Left: Educational programs give schoolchildren an early and lasting impression of how architecture enhances their lives.

Above: At sessions of the Mayors' Institute for City Design (MICD), mayors are empowered to make design a major tool for improving quality of life in their cities. The MICD is a program of the National Endowment for the Arts, administered through a partnership of the AAF and the U.S. Conference of Mayors.

Right: Exhibitions in the Foundation's Octagon Museum take architecture and design directly to the public and invite them to interact with it.

Above: Charles Royer, former mayor of Seattle, hosts *Block by Block: Reclaiming Neighborhoods by Design*, the AAF's third Accent on Architecture television documentary.

Above: "Architecture Afloat" tours show participants Washington, DC's landmarks from a whole new perspective.

You can promote a society in which people use the power of architecture to enrich their lives and transform their communities by supporting the initiatives of the AAF.

To get involved, contact Heather Livingston, 202-626-7486, or *hlivingston@aia.org*.

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POSITIONS AVAILABLE

DESIGN VICE PRESIDENT/LEADER

Invitation is extended for nominations/applications for Executive Vice President – Design positions at significant U.S. architecture and design firms. Locations include: New York City, Minneapolis, Washington DC, Atlanta, and Greenwich, CT. Firms sizes from 15 to 1,000+. Architecture, Interior Design, and Design-Build competencies sought. Must possess exceptional abilities as a design mentor with skills in collaboration, communications, and strategic thinking. Send resume and confidential cover letter to the Executive Recruitment Specialists: James P. Cramer, Greenway Consulting, 30 Technology Pkwy. S, #200, Norcross, GA 30092. e-mail jcramer@greenwayconsulting.com. Fax: 770-209-3778. Responses are strictly confidential until the formal interview level with our client. Candidates of the highest caliber with exemplary design talent and leadership skills are encouraged to apply.

SENIOR DESIGNERS

Senior Designer positions in Washington, D.C. Requires: Master's degree in Architecture or City Planning/Urban Design with 6 years experience as a Designer working on projects that include housing, large-scale residential subdivisions, offices, and commercial properties. EEO/AAP Employer. Send resume to: Jeannette Merino, Gensler, 2020 K Street, NW, Washington D.C. 20006. Refer to job #002 when responding to this ad.

ARCHITECTURE PRESIDENT EXECUTIVE VICE PRESIDENT

Invitation is extended for nominations/applications for President & Executive Vice President positions at several significant, growing U.S. architecture and design firms (50 employees to over 1,000). Leadership objective is to advance firms' overall client service, with emphasis on design, communications, finance, strategic planning, and operations. All positions require bachelors or masters degree in architecture or interior design plus appropriate licensing. Advanced degree or MBA desired. Minimum 15 years progressive experience. Send resume and cover letter to the Executive Recruitment Specialists: James P. Cramer, Greenway Consulting, 30 Technology Pkwy. S, #200, Norcross, GA 30092. e-mail jcramer@greenwayconsulting.com. Fax: 770-209-3778. Responses are strictly confidential. At interview level, a confidentiality/non-disclosure will be signed by both parties. Candidates of the highest caliber with a broad understanding of A/E/C growth potential are encouraged to apply.

INTERN ARCHITECT (MULTIPLE OPENINGS)

Under supervision of licensed architect, perform preliminary architectural design, computer-aided drafting using Microstation, detailing, freehand sketching, color rendering and computer generated 3-dimensional conceptual models and animation; prepare schematics and design development drawings; coordinate with structural, mechanical and electrical drawings; and prepare construction documents. Req.: Master of Architecture or foreign equiv degree in Architectural Design and Theory or related & demonstrated ability to perform stated duties by portfolio. Send resume to TVS, 2700 Promenade Two, 1230 Peachtree St., Atlanta, GA 30309. Ref. LG

SR. ARCHITECT / PROJECT MANAGER

Heery International, Inc. is an architecture, construction management, engineering, facility management, interior design and program management firm with 1000+ employees located in 30 offices throughout the United States, Canada, Mexico, and Europe. Founded in 1952, Heery has been recognized annually by such industry publications as Building Design & Construction and Engineering News-Record as one of the nation's top firms. Heery International's Atlanta office is looking for someone who is able to facilitate growth and further develop business relationships in the sports and recreation area for the Architecture/Engineering/Construction Management industry. Candidates must possess 10+ years as a Architect/Project Designer/Business Developer with significant sports/recreational facilities experience, in addition to possessing experience in Marketing/Business Development/Client Management. Previous experience with Design or Construction Management Services is required as well as being a self-starter with excellent written/oral and communication/presentation skills. A related degree is required. All offers are contingent to taking/passing Heery's pre-employment substance abuse test. EOE M/F/D/V.

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Plans, designs, & administers building projects for clients, applying knowledge of design, construction procedures and building materials: prepares information regarding design, specifications, materials, color, equipment. Plans layout of project & integrates engineering elements into unified design for client review & approval. Prepares scale drawings & contract documents for building contractors. Uses computer-aided design software, e.g. AutoCAD & imaging related software, & equipment to prepare project designs & plans. In addition to other related tasks as assigned. All work performed under the supervision of a licensed Architect. 40 hrs/wk, 8:00am-5:30pm, $37,500.06/yr. Must have Bachelor's degree in Architecture. Must have 1 year experience in job offered or as Interior Designer. Applicants must show proof of legal authority to work in the U.S. Send two copies of resume & cover letter to: Illinois Department of Employment Security, 401 S. State St., 7 North, Chicago, Illinois 60605, Attention: Brenda Kelly, Reference # V-IL 24864-K. No Calls. An Employer Paid Ad.

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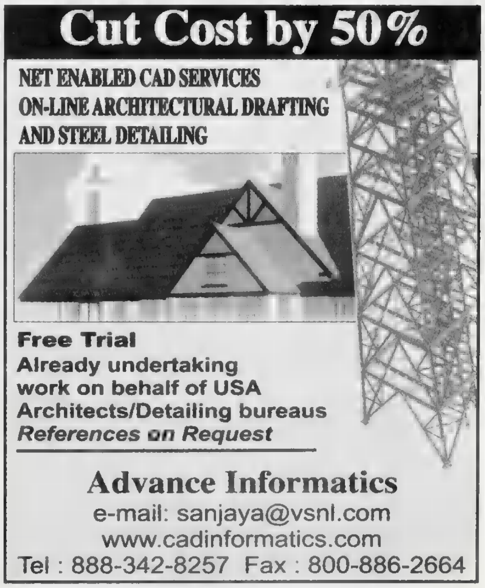

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Interviewed by Charles Linn, AIA

How does a small foundry located in Topeka compete for—and successfully complete—projects such as a 3½-ton bronze door for a villa on the Red Sea in Saudi Arabia [JUNE 2001, page 187] or the re-creation of exterior cast-iron trim on a long-lost cast stair for the Reliance Building, Chicago's first steel-framed skyscraper? Tim Degginger of Deggingers' Foundry, a fourth-generation business, says the ability of his firm to do innovative work depends on a team of associates who use modern methods of design, engineering, and construction while still drawing upon the traditions of tinsmithing, welding, pattern making, and casting.

Q: *You've done some amazing projects. Were any of you (Tim Degginger, Janet Zoble, and Mike Davis, left to right in photo) trained in foundry work?*

Timothy Degginger: I grew up in the business, but my degree is in chemistry. Janet does most of the designs and creates the CAD/CAM drawings. She has a degree in design from the University of Cincinnati, where she studied drawing, sculpture, and engineering and materials. Mike is our estimator. He was an accounting major and had about 15 years of experience working for an ornamental sheet-metal contractor before he joined us. We really work as a team.

Mike, how do you make estimates? Unit-price guides for labor and materials don't exist for this kind of work, do they?

Mike Davis: Some people would call my estimates "voodoo costing," but I am a very hands-on person. Janet works out the designs, with Tim helping on the foundry techniques, and as they're developing a concept, I work on estimates. I watch the guys work on the shop floor, see how long it takes them to do things, ask a lot of questions. I often build things in my mind, take them apart, and rebuild them to see if we've figured out the best way to do it. Our solutions are often very different from what the architects' originally propose.

Is working within the traditional means of metal crafting rather restrictive?

Janet Zoble: Well, we don't do that. We actually use almost any technology that will give us an appropriate visual effect. For example, we do patterning in a number of ways. Some is hand-sculpted; some is CAD/CAM cut; some crafted by master carpenters. We pour molds of rubber or plastic. We'll use any material we can get our hands on to create or re-create designs. For the stair at the Reliance Building, for example, we pulled molds off of balusters, newel posts, and stair brackets. Because changes were made over the years, the patterns were reproportioned by computer before castings were made from them.

TD: But traditional technology is the underlying basis for what we do. We share a common knowledge base and, using the synergy of our team of people, we have much better control over the process of creating things.

How has Deggingers' Foundry changed over the years?

TD: Our business used to be much more industrially oriented. We used to turn out thousands of identical castings. When it was my turn to run it, I decided I wanted to make things that would be one of a kind—that people would remember. And we're a team that makes that ideal a reality. ■

Photograph by Charles Linn, AIA

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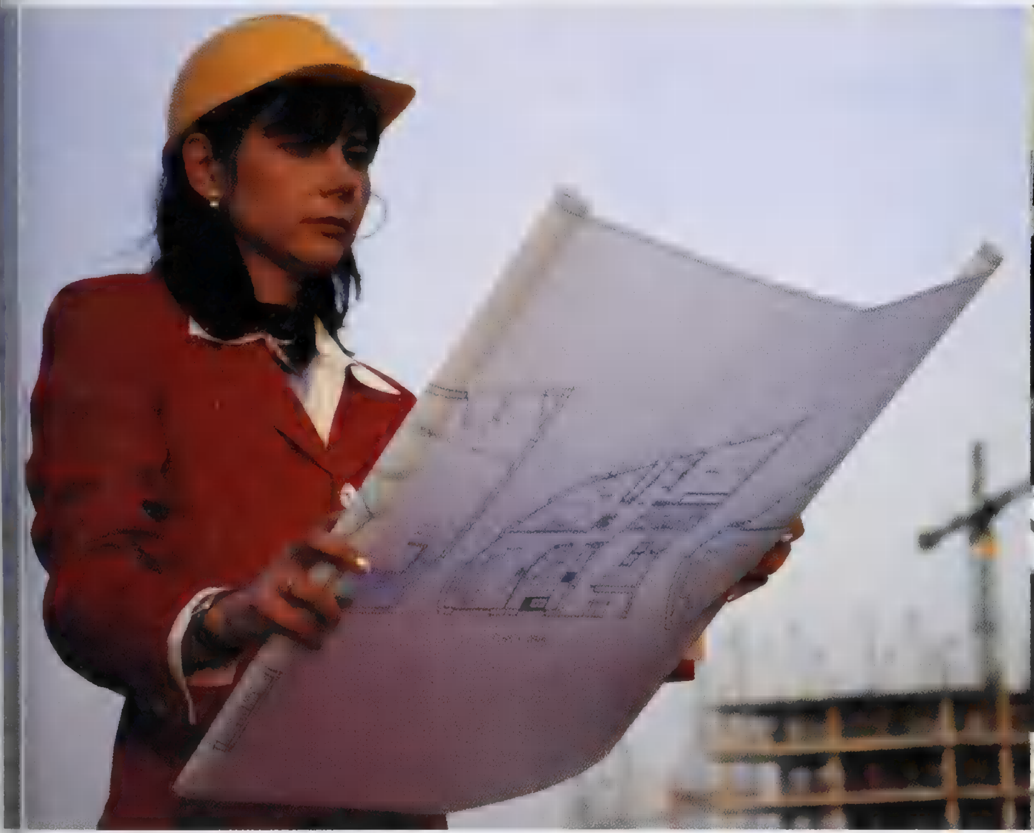

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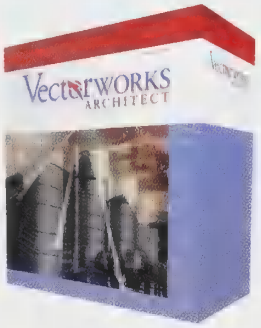

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